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Trade and Industry this week

HOME

Trade secretary visits textile industry

At the time of going to press, trade secretary John Smith was due to visit Lancashire for talks on the textile industry. During his two-day visit (Thursday and Friday) he was to hold discussions with trade union representatives and employers on the state of the industry and prospects for the future.

Subjects for discussion were expected to include the Government's concern to protect the British textile industry from low-cost imports, particularly through the multi-fibre arrangements; the industry's efforts to increase its share of the UK market and its potential for increasing exports; government support for the industry; and investment, productivity and other issues affecting employment.

Today Mr Smith is due to have discussions at Courtaulds in Manchester and to visit the Carrington Viyella Yarns plant at Atherton and the Dorma factory (Carrington Viyella Ltd) at Bradley Fold, Bolton.

Price safeguard provisions removed

Safeguard provisions of the Price Commission Act 1977, which has automatically allowed many price increases despite the Price Commission's decision to investigate them, have been removed under the Price Commission (Amendment) Bill, which received royal assent on Monday.

Details of the act and of amendments made to the bill during its passage through parliament will appear next week.

Steel reinforcing bars not exempt

The British Reinforcement Manufacturers' Association's scheme for supplying cut-and-bent steel reinforcing bars has been refused exemption from restrictive trade practices legislation.

In reply to a parliamentary question on Tuesday, prices minister John Fraser said the secretary of state had considered an application under section 29 of the Restrictive Trade Practices Act 1976 for exemption from registration of a proposed agreement between members of the association relating to the supply of cut-and-bent reinforcing bars. He was required to take into account any effects which an agreement was likely to have on purchasers and users and the views of organisations representing purchasers and users of the products covered by the scheme were therefore sought.

The secretary of state had concluded that the scheme did not meet the criteria set out in section 29 of the act and in particular he was not satisfied that the agreement was on balance expedient in the national interest.

Guarantee scheme launched by BAR for overseas removals

A scheme to guarantee the personal effects of people moving overseas has been launched by the British Association of Removers. John Fraser, Minister of State for Prices and Consumer Protection, referred to the scheme as 'a useful step forward' in answering a parliamentary question on Tuesday.

He said that following the collapse of certain companies in 1976, which affected several hundred emigrants he discussed with representatives of the British Association of Removers the possibility of introducing some type of bonding scheme. The association had now brought into operation a customer guarantee scheme, to be run by an authorised insurance company, in which all members of its overseas group would be required to participate.

The scheme provided for certificates to be given to customers to the value of the advance payment for the removal. In the event of default by the remover, the customer would be able to make a claim on an indemnity fund.

EUROPE

No agreement on eliminating MCAs

EEC agriculture ministers reached no agreement at the Monday council on eliminating any new monetary compensatory amounts (MCAs) which could develop if the European monetary system was introduced and the European currency unit was adopted for common agricultural policy purposes.

In a written parliamentary reply on Tuesday, UK agriculture minister John Silkin said there remained a basic difference of approach between France and the other member countries. He said he had made it clear that the UK could not consider arrangements for the automatic elimination of new MCAs unless it was decided also to maintain a freeze on common prices until surpluses were eliminated. The UK and Italy had sought a decision on the commission's proposals for moderate devaluations of the green pound and lira, but these had not been substantively discussed.

Mr Silkin said that these agri-monetary issues would be discussed again at the 5 to 6 March council. It now seemed possible that decisions on common prices for 1979-80 would not be reached before the scheduled beginning of the next milk and beef marketing years on 1 to 2 April. The government's attitude to any proposals to extend the current marketing years, he said, would be strongly influenced by the outcome of future council discussion of the commission's proposals for early green rate devaluations.

The minister had also pressed for early discussion by the council of the commission's proposals for a directive on provisions to protect the welfare of animals during international transport. He had urged that these rules should require that farm animals intended for slaughter should not be permitted to travel for more than 12 hours on their way to the slaughterhouse. The commissioner for agriculture had undertaken to consider this.

OVERSEAS

Britain provides £13.7m for Nepal

Britain is to provide £13.7 million in aid grants to Nepal for three development projects concerned with tourism, telecommunications and increasing high-quality tea production.

Growth of Nepal's tourist industry will be aided by finance for two Avro HS748 aircraft for the Royal Nepal Airlines Corporation. The cost of £6.5 million includes a programme of training for local engineers and pilots. A sum of £3.14 million will help improve Nepal's communications with the outside world, which will also help the country's tourist industry. The UK aid is a contribution towards a £14.5 million World Bank telecommunications project. Much of it will be used to buy equipment from this country, while £500,000 will be set aside to finance a team of technical experts helping install, maintain and manage the British equipment.

A grant of £4.1 million will assist a five-year tea development programme to produce high-quality teas in the over-populated and relatively under-developed eastern hills area of the country. Two new factories and two rehabilited tea processing factories will be set up and British money will also help with buildings, housing, transport and agricultural equipment, procured through Crown Agents.

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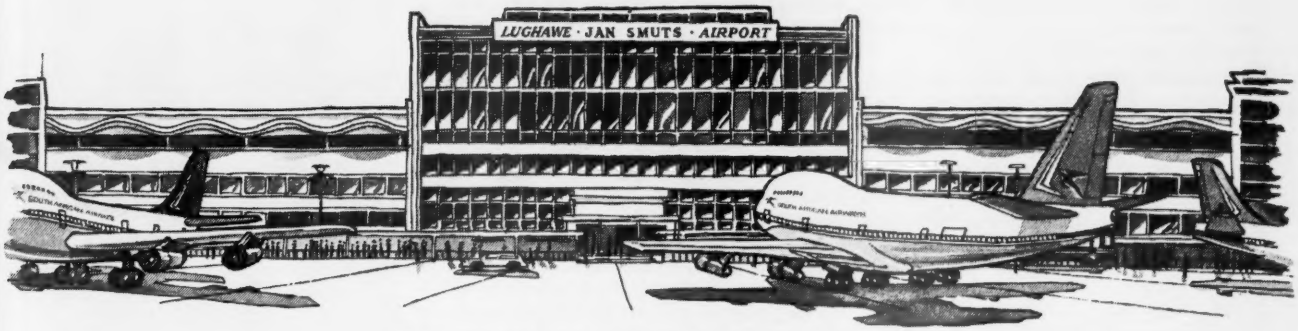

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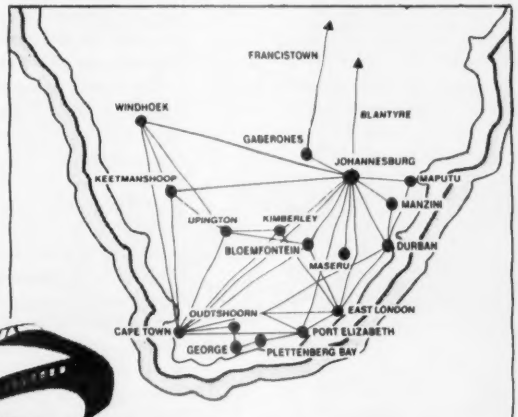

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Home news

No closed shop for estate agency practitioners

It is not the government's intention to do anything under the estate agents bill which will impose a closed shop upon those who practise estate agency work, said John Fraser, Minister of State for Prices and Consumer Protection, in London on 8 February.

Speaking at the annual luncheon of the Incorporated Society of Valuers and Auctioneers, Mr Fraser said that the society had expressed the fear that the approval of unqualified agents by the secretary of state or the fair trading director general could mean that the public might assume an expertise that did not exist. The society argued that the bill should require estate agents to show both a period of relevant experience and minimum professional qualifications. It also wanted the existing rules of conduct of the professional organisations to be imposed on non-attached agents.

'While the government wants to see higher standards in the profession,' said Mr Fraser, 'it believes that it would be wrong to impose unnecessarily high standards for the normal run-of-the-mill broking activities undertaken by the overwhelming proportion of estate agents for the transfer of residential property.

'The position is quite clear. It is not the government's intention to do anything which would impose a closed shop upon those who practise estate agency work. I respect the society's sincere desire to uphold the status of their profession and I recognise the benefits which accrue to the consumer from the high standards imposed by the society on its members in order to practise the specialised skills of valuation and surveying. But I cannot accept that a high level of academic achievement is an indispensable precondition for competence in arranging sales or purchases of private dwellings.

'Certainly it is the government's intention to make regulations with the object of ensuring that persons engaged in estate agency work should satisfy minimum standards of competence – but only after full consultations with, among others, bodies like the society which are representative of persons carrying on estate agency work. I believe this to be a more democratic – and even more efficient – approach than seeking to impose standards by diktat within the artificial confines of a prescribed period.'

Referring to the powers of the Director General of Fair Trading to prohibit by order any person from engaging in estate agency work if he considered that person to be unfit to practise, Mr Fraser said that the power to deprive a person of his livelihood was a very severe sanction and not one to be treated lightly.

Mr Fraser acknowledged that the society thought it most important that the bill make provision for an appeals panel and spell out its composition. Mr Fraser said that, with this in mind, it had been suggested to him that a mandatory provision in the bill should require the secretary of state to appoint a tribunal consisting of a legal chairman and two advisers, one with legal experience and one with experience in estate agency. Such a requirement would be most unusual in legislation.

'In any case,' he added, 'I do not think it would be desirable permanently to ossify the composition of the tribunal without paying due regard to the nature of all the appeals it will be required to hear. Any tribunals will need to consist of suitably qualified persons and there are bound to be occasions when experience of estate agency work will be highly relevant to an appeal – in considering unreasonable estate agency practices, for example – when it would be sensible to include an estate agent on the tribunal.'

'Of course we don't need qualifications to sell houses – just a straight face and a little imagination!'

Soft top for sardines?

Michael Meacher, Parliamentary Under-Secretary of State at the Department of Trade (right), examines a flexible 'tin can'. It was shown to him by Geoffrey Bar, chief executive of the packaging division of the Dickinson Robinson group, who explained the principle of the Sterilite retort pouch during Mr Meacher's visit to Bristol on 7 February. A review of the packaging industry is presented in this week's *Trade and Industry*, centre pages.

Stock exchange subject to restrictive practices law

The stock exchange's request for exemption from restrictive trade practices legislation has been refused.

Replying to a parliamentary question on 9 February, Minister of State for Prices and Consumer Protection John Fraser said that the Restrictive Trade Practices (Services) Order 1976 brought specified commercial services within the scope of the restrictive trade practices legislation. The stock exchange requested that it should be removed from the scope of the legislation by an amendment of the 1976 services order. He had decided that it would not be appropriate to meet this request.

On the application of the Director General of Fair Trading a notice of reference was issued in the restrictive practices court of an agreement between members of the stock exchange.

The director general has a duty to refer all registered agreements to the restrictive practices court for a ruling on whether or not the restrictions in an agreement are against the public interest. In certain limited circumstances, if the director general considers that restrictions in an agreement are insignificant and do not warrant reference to the court, he may ask the Secretary of State for Prices and Consumer Protection to discharge him from referring the agreement to the court.

The stock exchange furnished documents which constituted the registrable agreement of its members and this agreement was put on the public register of restrictive trading agreements in October 1977.

The majority of the restrictions are contained in the rules and regulations of the stock

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There is also a range of peripheral restrictions stemming from self-regulation of the market; the Office for Fair Trading has told the stock exchange that it would not, in principle, oppose restrictions important to the honest and stable running of the market, except to the extent that office sees uncompetitive effects from them.

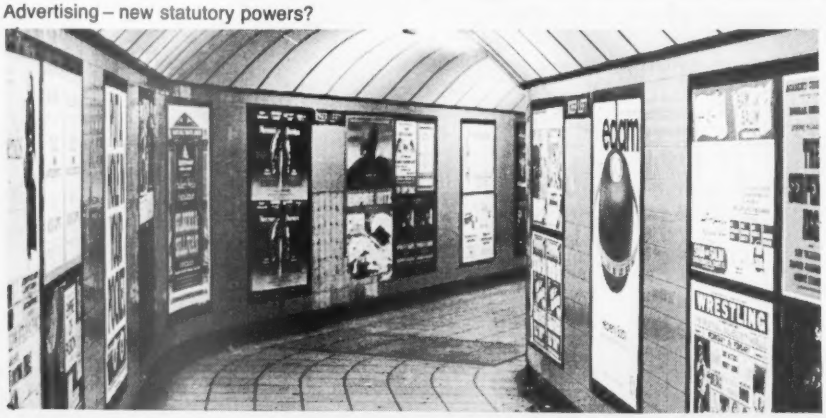
Working party to look at advertising controls

Statutory back-up for the present system of advertising control is to be discussed by a new joint working-party. Roy Hattersley, Secretary of State for Prices and Consumer Protection, told parliament on 6 February that the working-party would consist of representatives from the industry and government officials. He hoped its first meeting would be in about a fortnight and that firm proposals would be forthcoming in the summer.

Mr Hattersley said that he had met leading members of the industry on 31 January for a full discussion. There had been broad agreement that the flexibility of the existing system of self-regulatory control offered the best basis for responding to public opinion and adapting quickly to changing requirements of control; but that certain identified deficiencies in the existing system might best be remedied by the addition of some new statutory powers. He said that he welcomed a suggestion by the industry that a joint working-party of industry and government officials should be set up to consider and to recommend to him how best this reinforcement of the regulation of advertisements should be given effect.

Speaking about the wider social and economic implications of advertising, Mr Hattersley said that it was generally agreed that they posed problems of some complexity. He had asked his officials to continue discussions with the Advertising Association and to report back to him their conclusions.

Advertising – new statutory powers?



Nearly £3m arrears in VAT last year

Offences relating to VAT evasion resulted in 135 convictions carrying a total of 49 years 7 months imprisonment last year. Tax arrears amounting to £2 931 398 were involved and there were 4 669 prosecutions against traders for failing to make VAT returns.

The facts are given in the Customs and Excise report for the year ending 31 March 1978, published on 7 February (Cmnd 7455, HMSO £3.25). Arrears of duty and VAT totalling £1,235,000 were recovered during the year on imports where values had been underdeclared.

There were 881 appeals lodged with VAT tribunals but, before a hearing, 474 were withdrawn by the appellants. Of the 195 appeals heard during the year, 30 were allowed in full, 18 allowed in part, 122 were disallowed, 23 were awaiting decision or part heard and two were struck out.

Net receipts from VAT increased by 12.3 per cent to £4,234.8 million. This represents more than 34 per cent of the total net Customs and Excise receipts, Approximately 1 274 200 persons were registered for VAT at 31 March 1978.

Other subjects dealt with in the annual report include:

Customs and Excise receipts. They totalled £12,287 billion, an increase of 12.9 per cent over the previous year, and representing 34.8 per cent of central government taxation. The cost of Customs and Excise administration was £200.5 million, representing about 1.63 pence for every £1 of net revenue.

Import prohibitions and restrictions. More than £300,000 of television sets and £30,000 of textile goods imported in contravention of the Department of Trade's import licensing regulations were seized by Customs and Excise last year.

Customs officers also took possession of over 96 400 copies of books, magazines and horror comics, 2 700 films and 25 700 other articles, imported contrary to the prohibitions of indecent or obscene articles or harmful publications. Criminal proceedings were ordered against 57 persons. Penalties and costs totalling some £22,450 and prison sentences totalling, seven years and seven months were imposed. Other seizures included birds, animal skins, stuffed turtles and cacti imported contrary to the restrictions imposed for conservation reasons.

Drugs detection. During the year there were 1 525 seizures arising from attempts to smuggle controlled drugs into the country. The estimated street value of all controlled drugs seized in the year was approximately £10 million.

EEC agricultural levies. Net receipts were £178.2 million compared with £52.7 million in 1976-77. The increase was due to the combined effects of decreases in world prices, particularly in the cereals sector, and the abolition of accession compensatory amounts, both of which increased the levies.

Control of passenger traffic. There was a further increase in passenger traffic during 1977-78. Some 28 million passengers arrived by sea and air compared with 27 million the previous year.

Civil litigation. In the 1977-78 financial year, 3 898 actions to recover unpaid or disputed taxes were commenced in the high court and the county courts, an increase of about 619 actions on the figures for the previous year. A total of 696 bankruptcy petitions and 478 winding up petitions were presented. Over £4.9 million of duty and tax were recovered.

Car tax. Receipts rose from £218.0 million in 1976-77 to £285.8 million in 1977-78, representing 2 per cent of revenue.

Hydrocarbon oils. Net receipts from excise duty rose by 19 per cent from £2,067.3 million to £2,460.0 million; this represents 20 per cent of the total receipts. Consumption of petrol, derv, and heavy rebatable oil increased by 3.1 per cent, 3.2 per cent and 2.6 per cent respectively on 1976-77.

Tobacco. Total duty receipts rose to £2,057.6 million, an increase of 9.7 per cent over the previous year. Receipts from the tobacco duties represent slightly less than 17 per cent of the total revenue.

Total alcoholic drinks. Net yield from the excise duties increased by six per cent to £2,062.9 million. Receipts from alcoholic drinks represent nearly 17 per cent of the total net receipts.

Spirits. Receipts of duty rose by 0.7 per cent from £868.7 million in 1976-77 to £874.7 million in 1977-78. Withdrawals from bond on payment of duty fell by 7.2 per cent from 34.9 million proof gallons in 1976-77 to 32.4 million proof gallons in 1977-78. Exports of whisky were 95.5 million proof gallons, 2.3 per cent up on the previous year's figure of 93.4 million proof gallons.

Beer. Consumption rose by 0.3 per cent to 40.9 million bulk barrels. Duty receipts of £892.7 million were 10.4 per cent higher than the previous year's receipts of £808.3 million. The average gravity of beer fell from 1 037.49° in 1976-77 to 1 037.44°.

Wine. Receipts of duty rose by 7.6 per cent from £226.7 million in 1976-77 to £243.9 million in 1977-78. Quantities cleared to home use rose by 0.1 per cent from 69.5 million gallons in 1976-77 to 69.6 million gallons in 1977-78.

Customs duties. Total value of imported goods was £37,186 million, an increase of 11.2 per cent over 1976-77. Customs duties rose by 0.9 per cent from £675.8 million in 1976-77 to £681.9 million in 1977-78.

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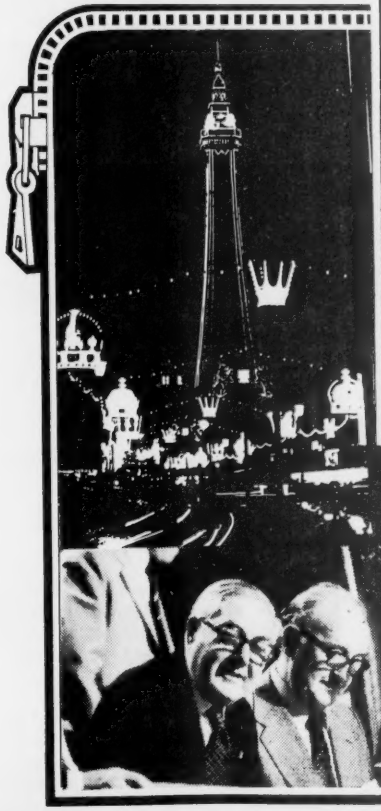

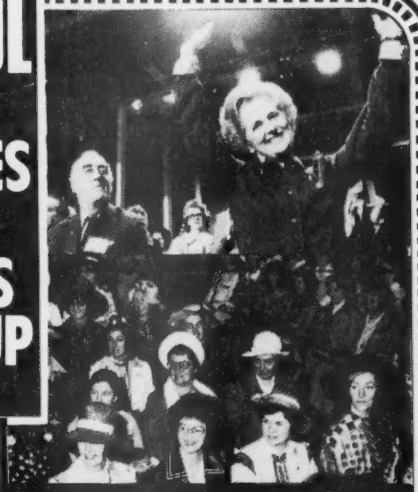

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Minimum lending rate raised

Minimum lending rate was raised from 12½ per cent to 14 per cent on 8 February. The Bank of England said that it had decided with the approval of the Chancellor of the Exchequer to raise the rate following an upward movement of market interest rates in response to developments in the domestic economy. The move is intended to support the government's policy of monetary restraint.

The last time minimum lending rate stood at 14 per cent was in January 1977. The figure has been exceeded only during the sterling crisis of 1976 when it stood at 15 per cent.

Big rise in reserves through revaluation

Britain's official reserves are expected to rise by about $3½ billion on 31 March through a change in the basis of revaluation.

Chancellor of the Exchequer Denis Healey said in answer to a parliamentary question on 8 February that the gold in Britain's reserves was valued at the old official price which had been well below market price for some time.

He had decided the official reserves should be revalued on 31 March this year and annually on the same date. The amendment of International Monetary Fund (IMF) articles last year had made it appropriate to review the practice of keeping to the old price, the chancellor explained. He had decided that gold would in future be valued in dollars at the average of the London fixing prices over the three months before each 31 March, discounted by 25 per cent.

Special drawing rights and foreign currencies other than dollars would be valued in dollars at the average of the exchange rates recorded by the Bank of England over the preceding three months. Most other countries valued their holdings of special drawing rights (SDRs) and foreign currencies at market related rates; Italy, France and the Netherlands also valued their gold holdings at market-related rates, he pointed out.

The gold component of the reserves is currently valued at the official price of $42.2222 per fine ounce. SDRs are valued at the dollar rate which prevailed just before the onset of generalised floating in 1973 ($1.20635) and non-dollar currencies are converted at historic, mainly Smithsonian, rates. As the dollar has fallen against gold and other major currencies these valuation rates have led to the published reserves being significantly undervalued in dollar terms.

Until recently the IMF articles of agreement laid down an official price for gold in terms of the SDR and there were limitations on official gold transactions above this price. The articles have been amended (the second amendment ratified in April 1978) so that the official price has effectively been abolished and gold can be valued at whatever price the authorities choose.

In deciding on the valuation, account has been taken of the possibility that if gold were to be sold or pledged during the course of a year it might not be possible to realise the market price as it stood on the previous 31 March. A discount of 25 per cent is therefore being applied.

The increase in the dollar value of the reserves resulting from this decision will depend on the movement in the gold price and changes in exchange rates over the three months to 31 March. The probable rise will be about $3½ billion.

Falmouth designated special development area

Arrangements are being made to make the Falmouth employment office area a special development area in the light of British Shipbuilders announcement of the closure of Falmouth Shiprepair Ltd. The necessary order will be laid before parliament shortly. This was announced by Alan Williams, Minister of State at the Department of Industry, on 9 February.

The effect will be to increase the rates of regional development grant to 22 per cent on buildings, plant and machinery. The area will also receive the highest priority under the government's advance factory building programme. It will continue to benefit from the measures already available to it including the highest rate of interest relief grant and the maximum rent-free period on government factories.

In addition the government is considering urgently the scope for other measures to help Falmouth including the provision of further advance factories for which land is currently being sought.

Replying to a question in the commons on 8 February, industry minister Gerald Kaufman said that the closure decision was a matter for British Shipbuilders and the company had informed the government that it intended to announce the cessation of shiprepair at Falmouth later that afternoon. In the light of this the minister would be taking the necessary steps to make the Falmouth employment office area a special development area.

A total of 1 287 are employed at the yard. Some of these are expected to be retained. Figures for last month show an unemployment rate in Falmouth of 13.4 per cent (15.2 per cent male), with 1 498 unemployed. This compares with the UK rate of 6.1 per cent (male 7.2 per cent) and the rate for the south-west development area (which includes Falmouth) of 11.1 per cent (male 12.7 per cent).

Merger proposals cleared

Secretary of State for Prices and Consumer Protection Roy Hattersley has decided, on the information at present before him, not to refer the following proposed mergers to the Monopolies and Mergers Commission under the provisions of the Fair Trading Act 1973.

Comfort Hotels International Ltd/City Hotels Group Ltd.

NV Beleggingsmaatschappij Wereldhave/English Property Corporation Ltd.

DoI advance factories

Ilfracombe

Two advance factories of 450m² each are being built for the Department of Industry at Mullacott Cross, Ilfracombe, Devon. Work has started and the premises should be ready for occupation in September. Inquiries regarding purchase or lease: Department of Industry, Pheonix House, Notte Street, Plymouth, PL1 2HF, tel. 0752 218914, or Regional Director, Department of Industry, The Pithay, Bristol, BS1 2PB, tel. 0272 291071.

NEB invests in George P. Brown (Holdings)

The National Enterprise Board (NEB) has acquired 49 per cent of the equity in George P. Brown (Holdings). In addition, NEB has agreed to make available a medium-term borrowing facility of £600,000. The cost of the equity investment was £575,000.

The group intends to expand its present facilities at Luton to meet pressure of demand. Its main operating subsidiaries, George P. Brown and Partners, and V. S. Engineering, are involved in the manufacture of welding and metal-forming equipment. Another subsidiary, V. S. Engineering (Ellesmere Port), acts as a subcontractor for the production of metal pressings and fabrications. All are based in Luton.

V. S. Engineering is said to be one of the few UK organisations able to handle the design, manufacture and installation of automatic, high-volume, multi-spot resistance-welding equipment and sheet-metal forming transfer lines for the automobile and domestic-appliance industries. The company is often in competition with foreign companies in procuring contracts of this nature.

NEB has invested in the group to encourage the rebuilding of a sector that has declined in recent years while the equivalent industry overseas has flourished.

Government sales

7 March 1979 – Miscellaneous

Location:
The Astoria, Roundhay Road, Leeds 8

Auctioneers:
Bartle and Son, 1a Bridge Street, Tadcaster, North Yorks (0937 835303)

Stores lying in north-east England comprising furniture, clothing and textiles, machine and hand tools, motor spares, tyres, vehicles, wireless equipment, and many other miscellaneous items.

Catalogues, which give details of the lots, conditions of sale, viewing times etc, are available from the auctioneers from two weeks before and up to the day of the sale, price 40p, postage 15p.

Health and Safety Executive Publications

The 1974 Health and Safety at Work Act gave the Health and Safety Commission responsibility for keeping some 25 million people informed of guidelines and regulations for their health and safety in places of work. The Commission has undertaken progressively to revise, standardise and extend the existing regulations and recommended practices. HSC/HSE publications reflect the major programme of research, inspection and consultation which is in hand.

Priced publications are obtainable only from HMSO or through booksellers. Some general leaflets, advice and information are available free of charge from HSE Area Officers or by post from the General Enquiry Point, Baynards House, 1 Chepstow Place, London W2 4TF (Tel. 01-229 3456 ext. 734).

Annual Reports

Health and Safety: Commission Report 1977-78 (£1.75) ISBN 011 883221 2
Health and Safety: Industry and Services 1977 (£2.75) ISBN 011 883222 0
Health and Safety: Mines and Quarries 1977 (£2.25) ISBN 011 883201 8
Health and Safety: Research 1977 (£2.50) ISBN 011 883210 7
Health and Safety: Statistics 1976 (£1.75) ISBN 011 883214 X.
Industrial Air Pollution 1976 (£3) ISBN 011 883074 0
Mines and Quarries District Reports 1976 (£1.50 each)
Health and Safety: Agriculture 1976 (£1.00) ISBN 011 883021 X
Health and Safety: Nuclear Establishments 1975–76 (£1.15) ISBN 011 883018 X
Health and Safety Employment Medical Advisory Service Report 1975–76 (£1.50) ISBN 011 883017 1

Advisory Committee Reports and reports of special investigations etc.

The Flixborough Disaster (£2.50) ISBN 011 361075 0
The explosion at Laporte Industries Ltd April 1975 (£1.25) ISBN 011 880333 6
The explosion at Houghton Main Colliery June 1975 (£1) ISBN 011 880328 X
The explosion at Appleby-Frodingham steelworks, Scunthorpe. November 1975 (£4) ISBN 011 88033 4
The explosion at the Dow Chemical Factory, Kings Lynn. June 1976 (£1) ISBN 011 883003 1
A survey of respiratory disease in the Pottery Industry (35p) ISBN 011 880346 8
Success and failure in accident prevention (80p) ISBN 011 880330 1
Final Report of the Advisory Committee on Falsework (£2) ISBN 011 880347 6
First Report of the National Committee on steep seam working in British coal mines (60p) ISBN 011 410248 1
Advisory committee on Major Hazards: First Report (£1) ISBN 011 880884 2
Selected written evidence submitted to the Advisory Committee on Asbestos 1976/77 (£5) ISBN 011 883004 X
Asbestos Health Hazards and Precautions, Interim statement (10p) ISBN 011 881114 2
Safe Manriding in Mines Parts 1A and 1B (£5) ISBN 011 880491 X
Digest of Pneumoconiosis 1975 (£2) ISBN 011 882006 0
Some aspects of the safety of nuclear installations in Great Britain (Replies to questions submitted by the Secretary of State for Energy to the Nuclear Installations Inspectorate in October 1976) (£1) ISBN 011 8830015
One hundred fatal accidents in construction (90p) ISBN 011 883071 6
The Fire on HMS Glasgow. 23 September 1976 (£2.75) ISBN 011 883075 9
Asbestos: Measurement and Monitoring of Asbestos in Air (£1) ISBN 011 883084 8
Asbestos: Work on Thermal and Acoustic Insulation and Sprayed Coatings (50p) ISBN 011 883083 X
Canvey: an investigation of potential hazards from operations in the Canvey Island/Thurrock area (£10) ISBN 011 883200 X (Summary of Report (£1) ISBN 011 883203 4)
Shift Work and Health (£1) ISBN 011 883216 6

Health and Safety (General) Series booklets

1 Polyurethane foam (£1) ISBN 011 883208 5
2 Poisonous chemicals on the farm (£1) ISBN 011 883215 8
3 Highly flammable materials on construction sites (£1) ISBN 011 883218 2
4 Highly flammable liquids in the paint industry (£1) ISBN 011 883219 0

Health and Safety (Regulations) Series booklets

Packaging and labelling of dangerous substances (60p) ISBN 011 8832131.

Health and Safety at Work Series booklets

3 Safety Devices for Hand and Foot Operated Presses (0 11 880862 1) (30p)
4 Safety in the use of Abrasive Wheels (0 11 880866 4) (65p)
5 Cloakroom Accommodation and Washing Facilities (0 11 880850 8) 45p)
6A Safety in Construction Work: General Site Safety Practice *(Reprinting)* (0 11 360120 4)
6B Safety in Construction Work: Roofing 1974 (0 11 880870 2) (16p)
6C Safety in Construction Work: Excavations (0 11 360101 8) *(Reprinting)*
6D Safety in Construction Work: Scaffolding (11 881452 4) (30p)
6E Safety in Construction Work: Demolition (11 360848 9) (25p)
11 Guarding of Hand-fed Platen Machines (0 11 880873 7) (18p)
12 Safety at Drop-Forging Hammers (0 11 880855 9) (18p)
14 Safety in the use of Mechanical Power Presses (0 11 880855 0) (75p)
18 Industrial Dermatitis: Precautionary Measures (0 11 880877 X
20 Drilling Machines: Guarding of Spindles and Attachments 1974 (0 11 880865 6) (35p)
22 Dust Explosions in Factories (0 11 880851 6) (30p)
23 Hours of Employment of Women and Young Persons (0 11 880876 1) (25p)
24 Electrical Limit Switches and their Applications (0 11 880840 1) (25p)
25 Noise and the Worker (0 11 880845 1) (22p)
27 Precautions in the use of Nitrate Salt Baths (0 11 880880 X) (25p)
29 Carbon Monoxide Poisoning Causes and Prevention (11 360838 1) *(Reprinting)*
30 Storage of Liquified Factories (0 11 880882 6) (45p)
31 Safety in Electrical Testing (0 11 880843 5) (38p)
32 Repair of Drums and Small Tanks (0 11 880852 4) (25p)
33 Safety in the use of Guillotines and Shears (0 11 880861 3) (30p)
34 Guide to the use of Flame Arresters and Explosion Reliefs *(Reprinting)*
35 Basic Rules for Safety and Health at Work (0 11 880857 5) (20p)
36 First Aid in Factories (0 11 880842 7) (25p)
41 Safety in the use of Woodworking Machines (0 11 880837 0) (£1)
42 Guarding of Cutters of Horizontal Milling Machines (0 11 880871 0) (30p)
44 Asbestos: Health Precautions in Industry 1974 (0 11 880879 6) (25p)
45 Seats for Workers in Factories, Offices and Shops (0 11 880883 4) (55p)
46 Evaporating and Other Ovens (0 11 880872 9) (55p)
47 Safety in the Stacking of Materials (0 11 880839 7) 40p)
48 First Aid in Offices, Shops and Railway Premises (0 11 883132 1) (25p)
49A Safety in the Cotton and Allied Fibres Industry. Opening Processes (0 11 360851 9) (25p)
49B Safety in the Cotton and Allied Fibres Industry. Card-room Processes (0 11 360854 3) (40p)
49C Safety in the Cotton and Allied Fibres Industry. Spinning, winding and sizing (0 11 360858 6) (45p)
49D Safety in the Cotton and Allied Fibres Industry, Fabric Production (011 883078 3) (60p)
50 Welding and Flame Cutting using Compressed Gases (011 883080 5) (25p)

*** Health and Safety Commission leaflets**

HSC 2 The Act outlined
HSC 3 Advice to employers
HSC 4 Advice to the self-employed
HSC 5 Advice to employees
HSC 6 Employers Policy Statements
HSC 7 Regulations, codes of practice guidance literature
HSC 8 Safety Committees guidance to employers whose employees are not members of recognised independent trade unions
HSC 9 Time off for the training of safety representatives (Code of Practice)

*** Health and Safety Executive leaflets**

HSE 1 After Flixborough . . . 10 vital questions for industry
HSE 4 Short guide to the Employers' Liability (Company Insurance) Act 1969
HSE 5 An introduction to the Employment Medical Advisory Service

*** Agricultural Safety leaflets**

AS1 A short guide to the 1974 Act
AS2 Tractors safety cabs
AS3 Bulls
AS4 Mushroom worker's lung
AS5 Farmer's lung
AS6 Crop spraying
AS7 Guns
AS8 Noise
AS10 Children
AS14 Cyanide gassing powders – Safe handling
AS16 Brakes for tractor-trailer safety
AS21 First aid in agriculture

*** EMAS leaflets**

MS(A)1 Lead and you
MS(A)3 Asbestos and you
MS(A)4 Study of asbestos workers
MS(A)5 The health of workers engaged in antimony oxide
MS(A)6 Vinyl chloride and you
MS(B)1 Ulceration of the skin and inside the nose caused by chrome
MS(B)3 Anthrax
MS(B)4 Effects on the skin of pitch and tar
MS(B)5 Skin cancer caused by oil
MS(B)6 Occupational industrial dermatitis
MS(B)7 Poisoning by pesticides

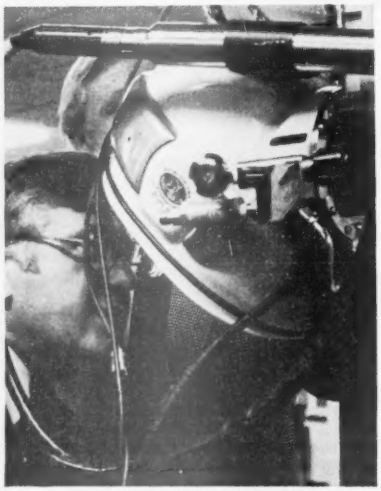
Guidance Notes

Guidance Notes (price 30p each) are too numerous to list here but are published under five headings: Medical; Environmental Hygiene; Chemical Safety; Plant and Machinery; General.

Enquiries to HMSO

* *Free of charge*

Looking into offshore equipment



Energy minister Dr J. Dickson Mabon examines an Undersee diver communication-system helmet during a visit to Offshore Inspection Ltd at its Glasgow offices on 26 January. The Undersee system is part of a range of inspection and non-destructive testing equipment developed and marketed by the company.

Agriculture white paper examines the way ahead

Government's view of the medium-term prospects for the agriculture industry are set out in a white paper 'Farming and the nation' published on 8 February.

Replying to a parliamentary question, agriculture minister John Silkin explained that there had been a number of developments since the earlier white paper on agriculture, 'Food from our resources', particularly the exceptional droughts of 1975 and 1976. This had meant that the industry had not expanded smoothly, and it was necessary to take a fresh look at the way ahead for agriculture in the medium term. Farming was one of Britain's most important industries, with a fine record over many years.

The new white paper examined the case for agricultural expansion over the next five years or so to provide for a greater share of the nation's food from within the UK, taking into account the likely cost and availability of imports and also the efficient allocation of national resources. The effect of the common agricultural policy on Britain's agricultural industry in the medium term was examined, and the white paper reiterated the government's determination to reform this. The availability of manpower and land, including considerations of land use and the conservation of the environment, and of technical and financial resources were also covered, Mr Silkin said.

He pointed out that the government had taken account of agriculture's claim on national resources and those of other interests and had examined the case for expansion of home agriculture in the context of a responsible approach to food imports, and the need to balance farmers' needs for fair returns and consumers' needs for reasonable food prices.

The white paper said that sustained expansion of agricultural net product was in the national interest and was practicable. The government's future policies would be designed to produce the conditions of stability and confidence needed to achieve this growth in output in the UK.

The government was also publishing a separate background document which presented the results of an economic and statistical study of possible patterns of demand and production of agricultural products by 1983. ('Possible patterns of agricultural production in the United Kingdom by 1983', HMSO, 60p). These projections were not targets but were designed to provide a basis for discussion of possible developments over the next few years. A technical paper setting out an analytical framework for assessing the economic effects of green pound devaluation would be published.

The white paper 'Farming and the nation' (Cmnd 7458) highlighted some areas of the agriculture and food industries which needed more detailed attention, he pointed out. In particular, agricultural marketing structures and techniques would face serious challenge in the next few years. The government was therefore setting up a committee of inquiry to consider how the marketing of agricultural produce could be improved.

Future of film exhibitors' quota

The film exhibitors' quota requiring cinemas to show a prescribed percentage of British or community films each year might be suspended. Trade secretary John Smith told parliament on 5 February that he was considering whether to introduce legislation for this purpose.

Answering a question asking whether the Cinematograph Films Council had yet completed its review of the film exhibitors' quota, Mr Smith said that it had. The Cinematograph Films Council had appointed a subcommittee to examine and report on the matter. Their report, which was accepted by a majority of members of the full council, recommended that legislation should be introduced to suspend quota and to permit its reintroduction if it proved necessary. 'I will wish to take all aspects into consideration – and possibly consult further with trade interests – before coming to a decision on whether to accept or reject this advice.'

The quota percentage for 1979 is 30 per cent for films exhibited as first-feature films and 25 per cent for films exhibited in the supporting programme.

How to save energy in the chemical industry

Energy saving in the chemical industry is the theme of a one-day seminar at the Great Western Hotel, Paddington, on 28 February.

Dr Duncan Davies, Chief Scientist and Engineer at the Department of Industry, will open the seminar, which is one of a series forming part of the department's campaign to encourage the more effective use of energy in the manufacturing industries. Other speakers will cover the more important opportunities for energy saving in firms of all sizes by waste-heat recovery, services, control and instrumentation.

Objects of the seminar are to show what can be achieved and to provide opportunities for exchanging ideas.

Further information and application forms from: Rubber and Plastics Research Association of Great Britain, Shawbury, Shrewsbury, Shropshire, SY4 4NR.

Degree day service: figures for January

Degree day figures for January, published by the Department of Energy, are shown in the table. This service is designed to help industry and commerce improve the efficiency with which space heating systems are used.

The figures are a record of the extent and length of time in a particular month that the external temperature fell below a base figure of 15.5 degrees C (60 degrees F). Because this affects the amount of fuel needed to provide a given level of space heating the figures can be used to check on the efficiency of heating systems. By comparing the amount of fuel used with the number of degree days in monthly periods of different years, energy managers and others can monitor the performance of heating plant and operate it more economically.

Detailed information about the system is contained in a free booklet *Degree Days* (no. 7 in the Fuel Efficiency series) available from the Library, Department of Energy, Thames House South, Millbank, London SW1P 4QJ, tel. 01-211 3394. It explains the theory and practice of using the figures and contains a map showing the locations of the 17 Meteorological Office stations and the regions covered.

January degree days (base temperature 15.5 degrees C)

Region	Calculated average for Jan 1957-77	1978 Jan	1979 Jan
Thames Valley	349	367	451
South East	372	393	472
Southern	343	354	447
South West	295	303	373
Severn Valley	347	353	452
Midland	376	391	499
West Pennines	362	376	474
North West	371	395	483
Borders	379	396	452
North East	378	409	504
East Pennines	368	395	490
East Anglia	383	391	495
West Scotland	374	413	488
East Scotland	384	422	477
North East Scotland	399	426	482
Wales	328	339	406
Northern Ireland	363	382	461

New publications

Spreading insurance risks

Insurance cover required for many of today's very large industrial and transport risks can only be provided by the mobilisation of underwriting capacity on an international scale. This is the purpose of reinsurance – the insurance of contractual liabilities incurred under contracts of direct insurance or reinsurance.

A major new work on the topic has recently been published, intended as a practical working tool for practitioners in this highly specialised field – whether they be professional reinsurance companies, reinsurance brokers and underwriters, or reinsurance specialists in direct insurance companies. The author, a well-known lecturer and writer on insurance, was advised and assisted throughout by specialists from the Mercantile and General Reinsurance Company.

The book divides into four main sections: general principles; matters affecting all classes of business; matters affecting particular classes; and financial and international aspects. Comprehension is aided by tables and diagrams, bibliographical references, and an index.

Practitioners of reinsurance, whether buyers or sellers, will find this handbook a valuable guide to the principles and practice of a business which grows ever more complex.

Reinsurance, by R. L. Carter. Kluwer Publishing, 1979. xi, 590 pages. £36.50 (ISBN 0 903393 38 7).

Promoting competition

Even firms which confine their activity to the UK may find that they are subject to the EEC competition rules, and so must take note of them. Mrs Korah's guide to EEC competition law and practice clearly introduces a complicated subject, examining and explaining the law and practice of the commission.

Although it covers similar ground to her earlier work, 'Competition law of Britain and the common market' (Paul Elek, 1975), which provides a full general description of this field of public control, her new book is essentially a practical handbook.

Divided into 12 chapters, which are further sub-divided into sections, the main body of the book suffers from a lack of cross-references from one section to another. After an introductory chapter and an analysis of article 85 of the treaty of Rome, the author considers such points as the European commission's powers of enforcement, distribution agreements, industrial property rights and patent licensing, joint ventures and the controversial decisions of the European Court of Justice on the abuse of monopoly power by commercial organisations.

Also included is a glossary of technical terms, excerpts from relevant articles of the treaty of Rome, a short annotated bibliography, and an index which usefully refers to sections of chapters rather than to pages.

This guide can be recommended as a compact and up-to-date handbook, written by a well-known expert and suitable for anyone seeking an understanding of this commercially significant field of law.

An introductory guide to EEC competition law and practice, by Valentine Korah. ESC Publishing Ltd, 14 Suffolk House, 265 Banbury Road, Oxford OX2 7HN. 1978. xviii, 142 pages. £6.75 (ISBN 0 906214 03 3).

Check that list

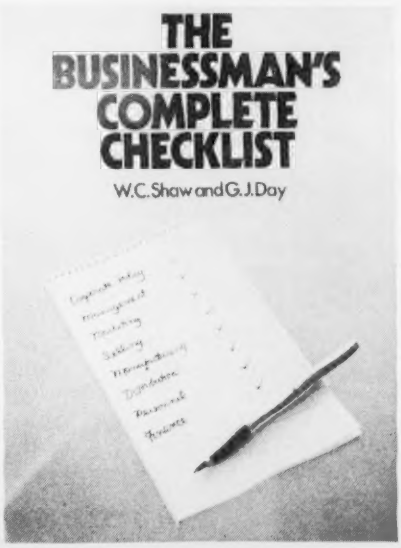
For functions as diverse as budgeting, warehousing and office planning, the checklist approach is a valid one. To have available a collection of varied and detailed checklists is therefore a useful start to thinking about many problems and mapping out possible solutions.

Under broad headings, such as 'corporate planning', 'management', 'manufacture', 'finance and accounting', 152 separate checklists have been prepared for Shaw and Day's 'The businessman's complete checklist', and many may find it worth further investigation.

For each category the authors have provided comprehensive lists of significant criteria, which reflect the extent of thought and consideration which they have given to the full complexity of issues faced by managers so that ingenuity and expertise can be effectively employed. And the text is helpfully illustrated by diagrams demonstrating procedural techniques.

In practice this step-by-step guide might be of greater relevance to staff with responsibilities at middle-management level rather than their seniors. By concentrating on specific management concepts and techniques, the authors ensure that the text is likely to remain relevant for some time.

The businessman's complete checklist, by W. C. Shaw and G. J. Day. Business Books, 1978. 152 pages. £9.95 (ISBN 0 220 66359 9).



EEC sources charted

Publications by and about the European communities continue to stream from the presses, and the necessity for published guides to this important literature remains as vital as ever. So the latest attempt is very welcome. The publishers, Mansell, issued a guide to EEC legislation last year (reviewed in *Trade and Industry*, 8 December 1978, page 490) and this sequel provides a more general approach.

Among the authors, gathered together by Doris Palmer in her 'Sources of information on the European communities', are a number of civil servants, who give good coverage in the business sphere with much otherwise difficult-to-obtain detail, though one is surprised to note that there is not a contribution devoted to the difficult field of agricultural documents.

The 10 chapters, bibliography and three appendices include valuable contributions on technical requirements in the EEC, company data, statistics and information on the environment. Two valuable items in the appendices are an explanation of units of account and a definition of the 'green pound'.

In putting together her guide Mrs Palmer has adopted a policy of interfering with the work of her authors as little as possible, and while this has resulted in duplication between some chapters, it has also meant that one is not continuously having to turn from one part of the book to another when dealing with a given topic.

This will undoubtedly become a valued guide, for the businessman in particular, as a practical reference work.

Sources of information on the European communities; edited by Doris M. Palmer. Mansell, 1979. x, 230 pages. £11.90 (ISBN 0 7201 0724 5).

Publications and opinions expressed on *this page do not necessarily reflect the* views of the government. Inquiries and submissions for review should be sent to *Trade and Industry*, New Publications Page, Room LG 17A, 1 Victoria Street, London SW1H 0ET, tel. 01-215 4136.

Technology news

Acard puts case for more innovation

Industrial innovation should be considered more in terms of improving manufacturing technology, product quality and control and less in the context of new advanced products, says a report by the government's Advisory Council for Applied Research and Development (Acard), published on 8 February. It also says that the special contribution which small firms can make to innovation needs greater recognition.

Based on the work of a small group set up under Dr A. Spinks of Imperial Chemical Industries, a deputy chairman of the council, the report contains recommendations for government action with industrial, financial and educational institutions. The council thinks that better use could be made of a number of existing industrial institutions, and recommends that an examination be made of the ways in which the trade associations and research associations might be enabled to play a wider role.

New technology-based firms are singled out for special mention, although the recommendations for more support to the small-firms sector recognise that it would not be practicable to isolate such firms for special treatment. The council stresses the argument that a thriving small-business sector can have a powerful impact on industrial change and movement.

The council defines innovation as covering the whole process of analysing and developing a new idea, designing a product and a production route, setting up for production, and making the product a commercial success in the market place. At each stage financial and market analysis will be required, and decisions whether to proceed or not will be much influenced by the size of the individual company and its targets.

It is clear, says the report, that initial R&D effort represents only a small fraction of the overall cost of bringing a new product to market. For areas of advanced technology the ratios of cost between R&D, engineering to production, to full production are popularly quoted as 1:10:100. Concentration on R&D alone as a basis for company, or national, planning therefore makes little sense, suggests the report. Future investments must be a primary consideration, together with the availability of technology from domestic or foreign sources.

The government is sympathetic to the main themes of the report (available from HMSO, price £1) and has it under active consideration.

'Add-on' shield reduces fuel consumption of commercial vehicles significantly

Wide-bladed cab-roof mounted adjustable shields are found by the Motor Industry Research Association (Mira) to be the most successful devices for giving significant fuel savings with commercial vehicles. This was the result of an investigation, sponsored by the Department of Industry, and carried out by Mira, into the effects of a range of proprietary 'add-on' devices on vehicle aerodynamic drag.

A report, K 23049, on the investigation has been published, price £12.50, by Mira, Watling Street, Nuneaton, Warwickshire.

The test vehicle was a chassis truck with a moveable container so as to represent either a rigid truck, where the container is close up to the driver's cab, or an articulated truck, with a representative gap between the cab and the trailer.

Aerodynamic drag was measured in the Mira full scale wind tunnel, and to establish a relationship between drag reduction and fuel savings, steady speed fuel consumption measurements were made on a test track. Following these tests the vehicle was driven around a 365 km road test route so that fuel consumption could be measured at intervals, with and without an 'add-on' device fitted.

The maximum reduction in aerodynamic drag, in wind tunnel tests, was 36 per cent. This was reflected on the test track in a fuel consumption saving of 16 per cent at 80 km/h and 13 per cent at 48 km/h. These savings were recorded with the test vehicle in a simulated articulated configuration and fitted with two devices – a cab-roof deflector and an 'air dam'. In a rigid truck configuration the drag and fuel savings were slightly lower.

The road test fuel consumption figures showed an average fuel saving of 13.2 per cent, which would be 1100 litres of fuel on a similar truck covering 40 000 km. Although the test vehicle was unladen, savings of a similar order could be expected from a laden vehicle.

The most successful family of devices was found to be wide bladed cab-roof-mounted shields in which the angle of the blade can be adjusted to suit the particular vehicle application. All other devices tested were less effective but did reduce the drag, and therefore the fuel consumption, of the basic test vehicle. Operating conditions may dictate the choice of device and in this respect the Mira report will aid final selection.

The test results showed good correlation between the wind tunnel measurements and the steady-speed fuel consumptions, demonstrating that the Mira wind tunnel is a suitable facility for comparing the drag coefficients of medium sized commercial vehicles and for developing drag-reduction devices.

Woollen tufts indicate the airflow pattern from 'add-on' shield in the Mira wind tunnel.

EEC invites applications for hydrocarbon project loans from UK firms

Applications are being invited by the European commission for the fifth round of interest-free loans for new technological developments in the exploration, production, transport and storage of oil and gas hydrocarbons. At least £13.5 million will be available for loans of between 30 per cent and 40 per cent of the project's cost. The loans are repayable if

the project is exploited commercially.

Closing date for applications is expected to be towards the end of May. Contracts for the selected projects will be negotiated at the end of the year. Firms submitting projects must be able to demonstrate competence and good financial backing.

The scheme – community projects in the hydrocarbons sector – was introduced in 1973 to support technological developments likely to improve the EEC's oil and gas supplies. In the first four rounds of the scheme loans of about £82 million for projects totalling about £224 million were approved with £24 million, about 30 per cent, going to British firms.

Projects which have been successful in the past have contained a high proportion of new technology or development of existing technology, have involved substantial investment, and have been capable of completion in three years. They were usually in drilling, deep-water engineering, natural gas exploitation and secondary recovery, though support has been given for seismic work, storage facilities or the development of tools, eg for remote underwater handling. All of them were full-scale construction projects rather than pilot plants, feasibility studies or 'desk-top' studies, which had a guaranteed demand, such as an oilfield operator undertaking to use the technology if the development work is successful.

A Department of Energy booklet 'Community projects in the hydrocarbons sector' has been prepared to help British industry take advantage of this scheme. The booklet gives details of the projects which have received funds from the community since the scheme started. The booklet, and further information, can be obtained from Nicholas Garthwaite, Community and International Policy Division, Department of Energy, Thames House South, Millbank, London SW1P 4QJ, tel. 01-211 3809.

Use of chemicals offshore subject to code of practice

A code of practice came into effect on 1 February providing for the exchange of essential environmental information on the wide range of chemicals used offshore. These include drilling mud additives, corrosion inhibitors, biocides and process additives. Many of these are ultimately discharged into the sea. Most are used in small amounts and are of low toxicity.

The code has been drawn up by the government and the oil and chemical industries. It is designed to enable offshore operators to provide a higher degree of environmental protection in the selection of chemicals for particular offshore applications. It also provides for consultations with fishery and other experts on cases that are potentially more difficult.

The scheme will be administered by the Department of Energy in consultation with specialists from the Department of Environment and the fisheries departments for England and Scotland. Details of the scheme can be obtained from Mr A. D. Read, Petroleum Engineering Division, Room 1177, Thames House South, Millbank, London SW1P 4QJ, tel. 01-211 5669.

Low-cost aircraft landing simulator developed by NPL

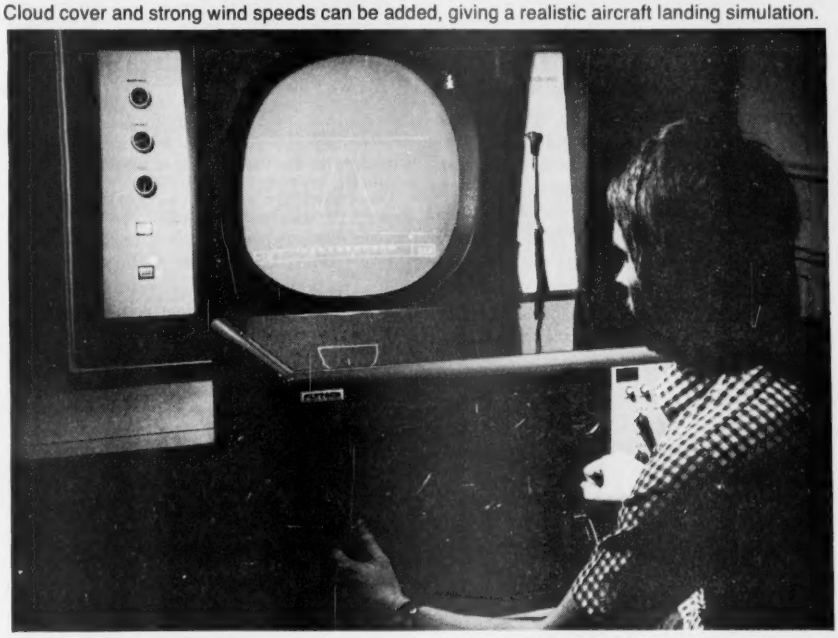
A low-cost prototype aircraft landing simulator has been developed by the National Physical Laboratory of the Department of Industry. It could bring a realistic simulator for training student pilots in the critical landing phase of a flight well within the reach of small flying clubs.

Called Malta (micro-processor aircraft landing training aid) it is based on a microprocessor and comprises a graphic terminal and a control console. The display shows the parallelogram shape of an aircraft landing area as seen during the approach and shows how it alters as an imaginary craft descends. Both angle of descent and the size of the runway can be varied. For those who find the approach a bit too easy, cloud cover and strong wind speeds can be randomly generated.

The control console is fitted as a standard light aircraft with instruments that include a stick or yoke control column, throttle control, flap control, air speed indicator, altimeter, vertical speed indicator, artificial horizon and glide slope indicator.

The graphics terminal indicates the landing strip and the horizon and has a read-out showing the air speed, the vertical rate of climb and descent and the altitude. This expensive terminal will be replaced by a tv monitor in any commercial version of Malta. A commercial manufacturer for the simulator is being sought by the laboratory.

Cloud cover and strong wind speeds can be added, giving a realistic aircraft landing simulation.



NRDC and US company to develop active silencers

Pioneering design of active silencers for duct-borne low-frequency noise has been brought a step closer to commercial exploitation by a mutual disclosure agreement between the National Research Development Corporation (NRDC) and Lord Corporation of Erie, Pennsylvania, United States. It is based on the work of Dr M. A. Swinbanks of Trinity College, Cambridge, and Chelsea College, London.

Lord's first objective is to confirm the results already achieved with NRDC sponsorship since October 1975 at Chelsea College. The aim will then be to evaluate the technique in order to decide the applications for which it appears most promising, and to pursue the development in these areas. Lord and NRDC will exchange findings from the new project in the United States and the continuing work by Dr Swinbanks.

The Swinbanks technique uses two, or possibly more, loudspeakers mounted in the wall of a duct to reduce the level of noise transmitted from, say, an air-conditioning system to an office. Microphones monitor plane sound waves coming down the duct and feed amplifier circuits that drive the two loudspeakers, which are a metre or so apart down the length of the duct, so as to contain the large-amplitude sound waves within this short section of duct and, in effect, soak up the acoustic noise. In the past few months Dr Swinbank's efforts have increased the frequency range over which an attenuation of 20dB can be achieved to 20 to 700 Hz.

The ultimate objective is the development of commercial systems for practical applications. Apart from the large market offered by noise reduction in heating and ventilating systems, there are also the prospects of quietening exhausts from industrial gas turbines and reducing noise and vibration transmitted in pipework in chemical process plant. Both Lord and NRDC are continuing to assess the potential industrial usage of active silencers and would welcome discussions with likely future users in the UK, the United States and other countries.

New products

Freepost reader service

For further information on items in this section, circle the corresponding number on the reader services page near the end of the magazine.

High-speed router has fixed table for flow lines

A high-speed router made by Wadkin Ltd in three versions is of cast-iron construction and is equipped with a heavily ribbed precision-ground table and a pneumatic rise and fall head. Having a fixed table is said to make the machine suitable for attaching external work supports or for fitting in a flow line. Operator fatigue is reduced by the rise and fall head, all adjustments being within easy reach, and the robust construction gives vibration-free operation, say the makers. Throat depth on all machines is 915 mm.

Other features of the Wadkin UX/F series include automatic profiling for exact repeatability of complex routing operations, guide pins secured by collets, adjustable turret stops and a head handwheel giving a total head movement of 255 mm. Quiet positive drive is given by the high-frequency head and complete safety is ensured by a no-volt and overload release. The spindle rotates at either 18 000 or 24 000 rev/min, speeds being changed by the flick of a switch. A spindle lock is incorporated to allow operators to change cutters easily and safely. Spindle bearings are greased for life.

An automatic copying device can be supplied for mass production work. It incorporates two rollers driven independently at steplessly variable speeds by an electronically controlled motor, and there is a slow-down feature for corners. Other options include a vacuum hold-down device, extension tables and a belt-driven head with spindle speeds of 10 000 and 20 000 rev/min. For safety reasons the hold-down device is electrically interlocked with the machine.

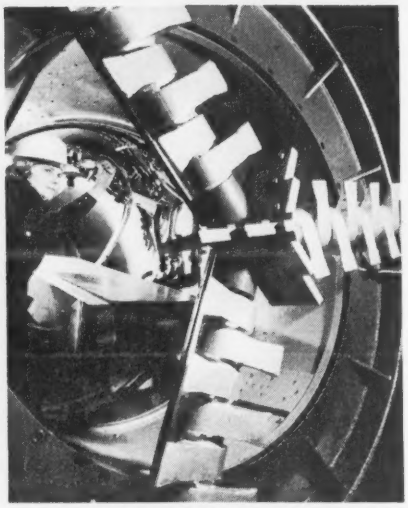
A tilting table measuring 775 mm × 900 mm for angle cutting and slotting is the special feature of model UX/F/2. The third model, UX/F/3, has a two-axis rack-driven table measuring 685 mm by 835 mm for pattern making, which saves the cost of jig making for small production runs.

Further information: circle 321

Pipelines installed without digging trenches

The problem of installing pipelines in busy city centres without the associated traffic disruption is overcome with this new fully mechanised tunnelling machine. Called the Powervane and developed by Marcon International Ltd, it can bore tunnels as small as 1.2 m diameter economically at depths of only 3 m below the surface. This makes it possible to install public service pipelines without digging trenches.

Claimed to be a quarter of the cost of a conventional electro-hydraulic machine, it is driven by compressed air from a standard diesel six-tool compressor many contractors will already possess. Being driven by compressed air rather than by electrical means, it is safe to use where sparks might be hazardous. It is also self-purging should water enter the motor.



The core of the Powervane is unobstructed.

The design of the cutting head and motor is mechanically simple and easy to convert for manual excavation in an emergency. Three radically disposed cutting arms each carrying rocking teeth are turned by the compressed-air motor, the outer casing of which forms an integral part of the wall of the machine. Low-pressure air injected between the rotor and stator vanes within the chamber of the motor cause the arms to oscillate. The core of the machine is unobstructed, permitting an operator to climb through to remove or un-jam the cutting arms when necessary.

The machine is propelled forward by a pneumatic piston instead of conventional hydraulic jacks. This allows grouting to be applied to the tunnel segments while they are still in the tail section of the machine, ensuring that no patches will be missed and waterproofing will be complete. Spoil is removed by standard conveyor and trolley arrangement.

Further information: circle 322

Cleaning process removes sticky waste from paper

What is claimed to be the first process to enable high-grade paper and card to be manufactured from waste heavily contaminated with latex and rubber-based impurities has been developed by Beloit Walmsley Ltd. More than 90 per cent of these sticky contaminants can now be removed using a three-stage cleaning system based on a centrifugal separator, a pressure screen and a core bleed cleaner. The process overcomes the growing problem for the paper recycling industry of dealing with latex-based glues which clog up machinery and cause holes and breaks in the paper produced.

Waste is first injected into a rotating chamber which removes heavy contaminants through a junk trap and forces light contaminants to the centre where they are continuously extracted by a core bleed. Accepted stock is then pumped into the pressure screen and finally through a three-way cleaner which separates treated waste from the remaining debris. The firm can modify existing machines or supply a complete cleaning system to suit customer requirements.

Further information: circle 323

Low-volume copier has advanced features

Rank Xerox (UK) Ltd has introduced a compact plain paper copier for the highly competitive low volume market in the UK. The Xerox 2202 offers some of the features of the more advanced Xerox machines at a price that is highly competitive and attractive to the low copy volume user.

Already successful in 18 countries, the Xerox 2202 has proven performance and reliability. It is a compact machine, complete with its own stand for supplies. With no warm up time the machine is ready for instant use, saving time on power consumption.

The new machine is a flat bed, dry toner copier capable of printing A4 copies at 10 per minute and B4 copies at five per minute. The machine can print from almost any original and has a simple operation for double sided printing. In common with other Xerox machines the 2202 has British Standards Institute approval in respect of electrical safety.

Further information: circle 324

Compact low volume copier with storage stand.

Parliament

Monday, 5 February

Regional price variations

Margaret Bain (East Dunbartonshire) asked the Secretary of State for Prices and Consumer Protection if he would refer to the Price Commission the problem of regional price variations within the United Kingdom, with particular reference to higher price levels in Scotland, request an authoritative survey and analysis, and give a commitment that any recommended solutions would be implemented.

Mr Hattersley said that he understood the concern about regional price variations to which the questioner drew attention. As she knew, the Scottish Consumer Council were carrying out a study in this area, and were expected to report fairly soon. He was considering what further action was needed.

Shipbuilding redundancies

Margaret Bain (East Dunbartonshire) asked how many jobs had been lost in shipyards, region to region, since the setting up of British Shipbuilders Ltd; and how current employment figures compared with those of 1960, 1965, 1970 and 1975.

Mr Huckfield said that he understood that 3231 employees of British Shipbuilders who were engaged in shipbuilding, shiprepair and marine engineering had been made redundant since vesting day. The regional breakdown of this figure was as follows:

Scotland	541
Northern England	1819
North-western England	469
Yorkshire and Humberside	23
East Anglia	19
South-eastern England	274
South-western England	86

Employment figures for those companies which now comprise British Shipbuilders were not available for years earlier than 1976. In that year average employment (excluding non-marine activities) was 79 477; in 1977 it was 78 145 and in November 1978, 77 100.

Microprocessor applications

Bruce George (Walsall South) asked how many firms had so far applied for assistance in developing the use of microelectronics; and how many applications had come from the West Midlands and Walsall.

Mr Huckfield replied that consideration was being given to more than 220 formal applications under part C of the microprocessor application project relating to project support, of which 33 had been given financial approval. Of these, 23 applications had been made by firms in the west Midlands, including Walsall, of which three had so far been approved.

Software lead

Renée Short (Wolverhampton North East) asked the Secretary of State for Industry what he was doing to ensure that Great Britain maintained its lead in software skills.

Mr Huckfield replied that his department was helping to maintain the UK's lead in this field by supporting product development in British companies, particularly through the software products scheme, and by encouraging the overseas marketing activities of the Computing Services Association. The activities of the NEB and its Insac subsidiary complemented the department's efforts in this sector. The government was also taking steps to ensure that the supply of skilled software personnel was not curtailed through a lack of training facilities.

International Computers Ltd

Michael Grylls (North West Surrey) asked the Secretary of State for Industry how much development aid had been paid out of public money to International Computers Ltd; and how much had been repaid up to 31 January 1979.

Mr Huckfield said that £13½ million had been paid to International Computers (Holdings) Ltd between 1968 and 1971. This was a non-recoverable grant. As decided by the previous Conservative government, £40 million in development aid was paid between 1972 and 1976. This was recoverable by a formula based on profit in the seven company financial years ending on 30 September 1984. None had been recovered to date. In addition, ICL had received a number of shared cost development contracts under schemes which were open to the industry generally. It was not the practise to reveal payments made to individual companies, but over 20 per cent had been recovered.

Selling software skills

Renée Short (Wolverhampton North East) asked the Secretary of State for Trade what help he was giving Great Britain's software industry to sell its skills abroad.

Mr Meacher said that his department made available through the British Overseas Trade Board a wide range of services to assist exporters market their goods, services and skills overseas. Software exporters made good use of those facilities, but no special help was given to them specifically.

Imports of bicycles

William Whitlock (Nottingham North) asked the Secretary of State for Trade what his views on the level of imports of cheap foreign bicycles of questionable design and construction which emanate from countries where there appeared to be hidden subsidies for such products; and whether, in the light of this threat to the British and European cycle industry, he proposed to press for an increase in EEC tariff levels.

Mr Meacher said that he had received no complaints that imported bicycles might be subsidised, but he was always ready to consider any evidence which may be put to him. Responsibility for bicycle standards fell to the Secretary of State for Transport.

Compensation deals with Comecon

George Robertson (Hamilton) asked the Secretary of State for Trade if he was satisfied that the present level of compensation trade deals with Comecon nations was compatible with the objectives of the government's industrial strategy.

Mr Meacher replied that it was difficult to generalise about the effects of compensation deals with the countries of eastern Europe. Such deals frequently involved substantial exports of capital goods and services from the United Kingdom and did not necessarily increase the level of imports which would have arrived in the UK in any case. One of the objectives of the Industrial Strategy was of course to achieve an increase in the UK's share of overseas markets.

Plant contract arrangements

George Robertson (Hamilton) asked the Secretary of State for Trade if he would seek to persuade the EEC commission to publish full details of compensation trading deals and plant contract arrangements with Comecon nations.

Mr Meacher said that the United Kingdom had played a full part in discussions within the European economic community and elsewhere aimed at assessing the development of compensation trading deals with eastern Europe and other parts of the world. There would, however, be very considerable difficulties in attempting to monitor such deals systematically because of the many forms they took and the fact that there was no general requirement for companies to report to the government the export and import orders which they concluded. Moreover, even where the existence of compensation deals was known, much of the relevant information was commercially sensitive.

Tuesday, 6 February

Robot technology

Renée Short (Wolverhampton North East) asked the Secretary of State for Industry what help he was giving to research into robot technology and what he was doing to further the use of robots in industry.

Mr Huckfield answered that his department was taking an active interest in this important field and was sponsoring already a number of commercial research and development projects in addition to commissioning a substantial programme at one of his research establishments. A study on the current activities in robots both in the UK and in other countries had been commissioned. This should identify areas for support in the future.

Largest firm's profits

George Rodgers (Chorley) asked the Secretary of State for Industry whether he estimated that there had been an increase or reduction in the profits of the largest 25 private firms in the United Kingdom during the last year; and what had been the percentage increase or reduction in such profits.

Mr Huckfield said that for the 25 largest UK industrial companies, excluding British Leyland, as given in 'The Times 1000 1978-1979', net profits before interest and tax as reported in the companies' accounts for accounting periods ending between 31 March 1977 and 1978, were 13 per cent higher than in the previous year.

Investment in Mexico

T. H. H. Skeet (Bedford) asked the Secretary of State for Trade what was the value of UK investment in Mexico, the percentage holding permitted to UK companies in local firms, and the type of industries where British investment was primarily located.

Mr Meacher said that information available about the value and industrial spread of British investment in Mexico related to the book value of net direct investment in Mexico by UK companies other than oil, insurance and banking companies. At the end of 1974 (no later information was available) this amounted to £51 million. Details by industry were published in table 3 of Business Monitor M4, 1974 supplement, Census of Overseas Assets 1974. Certain sectors of industrial activity – for example, petroleum and other hydrocarbons as well as basic petrochemicals – were reserved exclusively for the Mexican state. There were also certain other sectors reserved exclusively for Mexican shareholders. In all other sectors foreign investment was limited to a 49 per cent shareholding, but the Mexican authorities had indicated their readiness to interpret the law flexibly.

Wednesday, 7 February

System X

Renée Short (Wolverhampton North East) asked the Secretary of State for Industry why the company set up to sell the System X telecommunications system worldwide was not all British, and if he was satisfied that there was not a conflict of interest for the subsidiary of a major American manufacturer selling a rival system participating in the British venture.

Mr Huckfield answered that the decision to set up the company was taken by the Post Office and the three largest manufacturers of telecommunications equipment in the UK, who agreed that it represented the most effective way to promote System X overseas. He understood that arrangements for safeguarding information, acceptable to the parties, had been agreed.

Ministers

Department of Industry

Secretary of State: Eric Varley
Ministers of State: Alan Williams
Gerald Kaufman
Parliamentary Under-Secretary of State: Leslie Huckfield

Department of Trade

Secretary of State: John Smith
Parliamentary Under-Secretaries of State: Michael Meacher
Stanley Clinton Davis

Department of Prices and Consumer Protection

Secretary of State: Roy Hattersley
Minister of State: John Fraser
Parliamentary Under-Secretary of State: Robert Maclennan

Directors and company consultants

Bob Cryer (Keighley) asked the Secretary of State for Trade if, in the light of the Peachey report, he proposed to introduce legislation to subject directors and company consultants to stricter legal obligations.

Mr Smith said that the conduct of company directors was already governed by statute and common law. Proposals to strengthen the law were published in the white paper on conduct of company directors (cmnd 7037) and formed part of the Companies Bill which was currently under consideration in committee. He was considering whether these provisions should be strengthened, but he pointed out that the conduct described by the inspectors in their report on Peachey Property Corporation Ltd appeared to have been unlawful under the existing law. To prevent a recurrence of situations of that kind the first essential was that directors of companies should examine whether they were meeting all their responsibilities within the existing legal framework, and in particular take steps to ensure that internal financial control systems were adequate. He did not consider it would be appropriate to legislate on the contractual relationship between companies and consultants. It was for the directors to determine whether particular expenditure was in the interests of the company.

Thursday, 8 February

Industrial disputes and GNP

Tim Renton (Mid-Sussex) asked the Secretary of State for Industry by how much he expected growth in Greath Britain's gross national product in the current year to be reduced by industrial disputes which had taken place so far during the year.

Mr Huckfield replied that, on the basis of early reports from industry, it was estimated that, as a result of the road transport strike, about 10 per cent of manufacturing production may have been lost in January. This sector contributed less than 30 per cent to gross national product and some of the loss was likely to be made good with the return to normal conditions. There was no information regarding the effect of this or any other dispute on the economy as a whole.

Opto-electronics

Renée Short (Wolverhampton North East) asked the Secretary of State for Industry what he was doing to concentrate research and development in optoelectronics as recommended in the latest National Economic Development Council report on microelectronics.

Mr Huckfield said that his department was collaborating with the electronic components sector working party and with industry in the preparation of a strategy for that important and developing industry. The strategy would be announced shortly, after which the secretary of state hoped to be able to announce the government's response to it, including a programme of support.

Loans to shipowners

Michael Grylls (North West Surrey) asked the Secretary of State for Industry if he would state the total of loans under the home credit scheme to United Kingdom shipowners in the years 1976-77, 1977-78 and so far in 1978-79; and when the first loans were due for repayment.

Mr Huckfield said that guarantees were provided under section 10 of the Industry Act 1972 in respect of the following loans to UK shipowners:

Year	No.	Value (£m)
1976-77	38	145.9
1977-78	42	134.2
1978/Jan 1979 (10 months)	38	165.5

The terms of these loans provide for repayment over seven years starting six months after delivery of each vessel.

British Shipbuilders

Michael Grylls (North West Surrey) asked the Secretary of State for Industry when he expected to determine the commencing debt of British Shipbuilders; and how much public dividend capital and how much national loan fund money had been issued up to 31 January to British Shipbuilders.

Mr Huckfield replied that, in determining the commencing debt, regard must be had to the aggregate amount of compensation payable under the Aircraft and Shipbuilding Industries Act. He could not say when negotiations and any arbitration on this would be completed. Up to 31 January, £40 million had been made available to British Shipbuilders from the national loan fund on a temporary basis pending a decision on long-term financing. No public dividend capital had been issued.

Import penetration

Nigel Lawson (Blaby) asked the Secretary of State for Industry if he would publish a table to show the net change in the degree of import penetration in each of the areas covered by sector working parties under the industrial strategy between 1973 and the latest year for which figures were available.

Mr Huckfield answered that the following table gave estimates of the change in import penetration between 1973 and the 12-month period ending September 1978 for 33 sectors of manufacturing industry approximating as closely as possible to the areas covered by sector working parties. He would, however, also draw the questioner's attention to the answer he gave on 18 January (*Trade and Industry*, 26 January), which gave information relating to changes in import penetration in each of those sectors covered by the sector working parties from the time they were set up.

Industrial sector	Standard industrial classification reference	Change in import penetration [1] (percentage points)
Food and drink	211 to 232	−2
Organic chemicals	271.2	+7
Pharmaceuticals	272	+2
Synthetic resins, plastics materials and synthetic rubber	276	+10
Iron and steel and steel tubes	311 and 312	+5
Iron castings	313	+1
Non-ferrous metals	321 to 323	+2
Machine tools	332	+8
Pumps, valves and compressors	333	+6
Industrial engines	334	−1
Textile machinery	335	—
Construction and earth-moving equipment	336	+42
Mechanical handling equipment	337	+8
Office machinery	338	+44
Other machinery	339	+2
Industrial plant and steelwork	341	+3
Surgical, scientific and industrial instruments	353 and 354	+8
Electrical machinery	361	+8
Telegraph and telephone apparatus	363	+5
Electronic components	364	+11
Broadcast receiving and sound reproducing equipment	365.2	+5
Electronic computers	366	+18
Radio, radar and electronic capital goods	367	+4
Domestic electrical appliances	368	+4
Engineers' small tools and gauges	390	+2
Man-made fibres	411	+2
Woollen and worsted	414	+5
Hosiery and other knitted goods	417	+6
Clothing other than headgear	441 to 445, 449	+7
Footwear	450	+9
Paper and board	481	+3
Rubber	491	+5
Plastics products	496	+1

[1] Defined as imports (cif) as a percentage of UK demand, ie UK manufacturers' sales plus imports (cif) less exports (fob) in current value terms.

Source: Departments of Industry, Trade and Prices and Consumer Protection.

Market entry scheme

Michael Grylls (North West Surrey) asked the Secretary of State for Trade how many offers had been made, and how many had been accepted under the market entry guarantee scheme; and how much public money had been paid out so far under the scheme.

Mr Meacher replied that up to 6 February, 20 offers of assistance had been made under the market entry guarantee scheme. All had been accepted; £90,356 had been paid out.

Retail price index

Michael Neubert (Romford) asked the Secretary of State for Prices and Consumer Protection what was the effect on the retail price index of the aggregate reductions of £120 million, estimated by the Price Commission to have resulted from price increases being withdrawn or reduced, or postponed either formally or by voluntary undertaking, in the 12 months to 1 August 1978; and what further effect on the retail prices index there would have been if no safeguards had been invoked during and or subsequent to investigations and examinations under the Price Commission Act 1977 during that period.

Mr Maclennan said that £120 million might represent between one-seventh and one-eighth of one per cent of annual consumers' expenditure. It was estimated that the total yield per year of price increases awarded under the safeguard regulations in the 12 months to 1 August 1978 was approximately £287 million, equivalent to about one-third of one per cent of annual consumers' expenditure. Because one could not say how much of these increases would have been awarded at the commission's discretion had the safeguard regulations not existed, one could not estimate what the effect on the retail prices index might have been. However this did not take into account the extent to which firms either did not seek price increases or sought price increases lower than they otherwise would because of the existence of the Price Commission.

Friday, 9 February

Government support for industry

Michael Grylls (North West Surrey) asked what were: (a) the number of offers made, (b) the total number accepted, (c) the value of such offers and (d) the total payments made up to 31 January under the following schemes:

Mr Huckfield gave the information:

Clothing industry scheme: (a) 833, (b) 673, (c) offers made, £19.2 million, offers accepted, £13.5 million, (d) £7.4 million.

Drop forging industry scheme: (a) 13, (b) 13, (c) £465,654 (maximum), (d) nil.

Electronic components industry scheme: (a) 62, (b) 54, (c) offers made, £14.5 million, offers accepted, £13.5 million, (d) £1.1 million.

Instrumentation and automation industry scheme: (a) 45, (b) 40, (c) offers made, £3.297 million, offers accepted, £3.126 million, (d) £0.634 million.

Non-ferrous foundry industry scheme: (a) 169, (b) 155, (c) offers made, £14,487,944, offers accepted, £13,470,154, (d) £1,785,326.

Paper and board industry scheme: (a) 90, (b) 83, (c) offers made, £19.0 million, offers accepted, £17.3 million, (d) £6.3 million.

Assistance to manufacturers of printing machinery scheme: (a) 57, (b) 52, (c) offers made, £10.0 million, offers accepted, £8.7 million, (d) £1.7 million.

Textile machinery scheme: (a) 50, (b) 45, (c) offers made, £12.3 million, offers accepted, £11.9 million, (d) £1.1 million.

Poultrymeat processing industry scheme: (a) 70, (b) 68, (c) offers made, £6.93 million, offers accepted, £6.759 million, (d) £2.177 million.

Redmeat slaughterhouse industry scheme: (a) 86 (relating to 84 projects), (b) 79, (c) offers made, £6.1 million, offers accepted, £5.58 million, (d) £0.8 million.

Food prices

George Gardiner (Reigate) asked the Secretary of State for Prices and Consumer Protection if he would list the cumulative increase in food prices since February 1974 in all member countries of the EEC, the United States of America, Canada and Japan, to the latest available common date.

Mr Maclennan replied that the cumulative increases as requested were given in the following table. As the overall figures concealed differing trends over time, the latest annual increases were also given. Comparisons of increases in food prices were complicated in that the inclusion of alcoholic drinks and tobacco varied between countries.

% increases

	Feb 1974-Nov 1978	Latest 12 months (Nov 1977-Nov 1978)
Belgium [1]	41.2	−0.5
Denmark	66.9	8.5
France [1]	64.6	8.1
Germany (F.D.R.) [1] [2]	17.5	0.1
Ireland	103.0	11.6
Italy	124.5 (Feb '74-Oct '78)	11.9 (Oct '77-Oct '78)
Luxembourg	35.2	2.7
Netherlands [2]	28.8	−0.4
United Kingdom	106.0	7.8
USA	38.3	11.3
Japan	43.7	3.1
Canada	58.7	14.0

[1] Includes beverages. [2] Includes tobacco. Sources: OECD 'Main Economic Indicators', national sources.

European community news

European court rules on tachographs

The Smiths EEC tachograph model no. SG 24.

The European Court of Justice made a judgement against Britain on 7 February for failing to carry out its obligations under the treaty of Rome by not implementing an EEC regulation to fit tachographs to heavy lorries and coaches.

It became compulsory for member states to fit tachographs – speed and mileage recorders – to newly registered heavy vehicles in 1975. New member states such as Britain were given until January 1976 to implement this ruling, with a final date of 1 January 1978 to install tachographs in all heavy vehicles, except those engaged only in local traffic.

The European judges upheld the commission's charges against Britain for failing to implement the regulation and have ordered Britain to pay costs.

Channel tunnel proposal by British Rail

Proposals by British Rail for a single-track channel tunnel linking London and Paris were submitted to transport secretary William Rodgers last week.

Speaking of BR's proposals in the commons on 9 February, Mr Rodgers said that there was no question of the government entering into a new public spending commitment at present. Mr Rodgers added that the government would consider the proposals carefully but its position on the project, abandoned in 1975, was unchanged.

BR has advised Mr Rodgers that it intends to carry out detailed planning for the tunnel project in co-operation with continental colleagues and in consultation with interested parties in the UK. In addition, BR has asked the secretary of state to indicate the government's attitude to the project. These moves follow a preliminary technical and economic study in which a team of British and French railway managers concluded that a single-track Anglo-French rail link would be technically feasible and financially viable.

The report indicates that the rail-only tunnel, which could be open for business in 1990, could be catering for eight million passengers and almost eight million tonnes of freight annually by the year 2000. The cost of the scheme, spread over a seven-year construction period and shared by Britain and France, would be some £650 million, including the building of new trains and improvements to existing railways in England and France.

An annual discounted real rate of return exceeding 10 per cent would be anticipated from the investment. 'A single-track tunnel provides a viable solution to the provision of a fixed link between the rail networks of BR and SNCF (French Railways)', the report concludes.

'It would be both practical and economic to provide a single-track tunnel for through rail traffic linking the existing rail network at points near to Folkestone and to Calais', BR say. 'Through rail services using such a tunnel could be accommodated within existing railway routes and, apart from a short connecting line between the tunnel and the existing Southern Region, there would be no need for a new railway in England or in France'.

Unlike the previous channel tunnel plan, there would be no provision in the new rail-only plan for road vehicles which would continue to cross the channel by ship and hovercraft as now. Limited holding facilities for freight trains would be required near each tunnel portal, but the large road/rail interchanges planned in the previous scheme would not be necessary.

No decision yet on farm prices

Discussion on the implications of a European monetary system (EMS) for the common agricultural policy (CAP) was resumed at the agriculture council on 5 and 6 February, but no agreement was reached.

The lengthy discussion was based on the commission's suggestions for phasing out monetary compensatory amounts (MCAs). These are border taxes or subsidies which cancel the competitive price advantages or disadvantages incurred by EEC farmers in EEC markets outside their own country as a result of changes in national exchange rates. The commission is proposing a phasing out of any monetary subsidies within two years and of existing MCAs within four years for countries fully participating in the EMS.

Agriculture minister John Silkin, reporting on the council in the house of commons on 7 February, said he had argued that the real problem was that CAP prices were generally too high, thus giving rise to expensive and wasteful surpluses. He said he had made it clear that the UK government would not be able to accept any automatic mechanism for the elimination of MCAs unless there were first a price policy eliminating surpluses.

The council also held a preliminary discussion of the commission's proposals for CAP prices for 1979-80, introduced by agriculture and fisheries commissioner Finn Olav Gundelach. Mr Silkin told the commons that he had argued for a reduction in prices of surplus products such as milk, sugar and wheat. He said he strongly supported a standstill on other prices and had told the council that the proposal for a more severe co-responsibility levy – which is part of the commission's plan for dealing with the community milk surplus – was a poor substitute for direct action on prices and would discriminate against efficient producers.

The council, he said, had agreed a directive providing for a co-ordinated programme of arterial drainage in catchment areas straddling the border between Northern Ireland and the Irish Republic. The programme, which will benefit some 6000 hectacres in Northern Ireland, would cost in total over 15 million units of account and will attract 50 per cent aid from the EEC.

Mr Silkin added that he had urged the earliest implementation of the commission's proposed revisions in the co-efficients used for calculating MCAs on pigmeat products and said he would continue to press for this.

More community news

Information on European community matters and about member states can often be found in other sections of *Trade and Industry*. For this week's additional news, turn to the following pages:

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Loans for UK power schemes

Loans worth £101 million (149.6 million units of account) have been made by the European Investment Bank, the European community's long-term finance institution, for power-supply schemes in England and Wales.

The majority – £70 million, made available to the Electricity Council for 15 years at 9.45 per cent – will go towards construction of the Dinorwic hydro-electric power station near Snowdon.

Pumped storage

The Dinorwic scheme uses the 'pumped storage' principle. Off-peak power produced during the night by base-load power stations will be used to pump water from one lake to another at a higher level. From there it will be released to flow down again to drive turbines and generate electricity to meet peaks or surges in demand or, in an emergency, to replace sudden loss of output from other stations and to regulate the frequency of the national grid.

This will help CEGB to maximise production from its most efficient plant, the large base-load power stations (mainly coal-fired or nuclear), which is one way of limiting dependence upon oil for generating electricity.

The station, the largest of its kind in Europe, will be equipped with six reversible pump-turbine sets (together capable of generating 1680 MW for five hours when acting as turbines). It should come on stream in stages, beginning autumn 1981, at an estimated cost of around £400 million. The EIB has provided earlier loans for the project, in 1976 and last year, totalling £48.9 million.

Distribution systems

The remaining £31 million will go towards modernisation and extension of regional electricity distribution systems. The council will pass the funds on to the Merseyside and North Wales Electricity Board, the North Western Electricity Board and to the South Wales Electricity Board to help finance about 280 local schemes which will be carried out over the next two years at an estimated cost of some £78 million.

Most of the works concern improved electricity supplies to industry (notably to many industrial estates) and for agriculture, helping to support economic activity in areas suffering from high unemployment.

Examination of commission structure

The independent review body set up to examine in depth the organisation and staffing of the European commission has begun to hear evidence.

The British member of the committee is Dick Taverne, director of the Institute of Fiscal Studies and part-time director of British Oxygen International.

The chairman is Ambassador Dirk Spierenburg, of the Netherlands. The other members are Karl Buschmann, Paul Delouvrier and Giuseppe Petrilli.

The committee's terms of reference are to examine ways in which the commission's resources can best be adapted to new priorities and how the career structure within the commission can be improved.

Routine talks on Lomé

Claude Cheysson, community development commissioner, was in London on 8 February for routine talks with foreign secretary David Owen on the state of negotiations on the Lomé convention. The convention is due to expire in 1980.

The next ministerial meeting between the EEC and the association of African, Caribbean, and Pacific countries is to take place on 22 and 23 March and the concluding conference in April or May. It is hoped that a new convention will be signed in June.

One of the outstanding differences to be resolved is the human rights question. Britain's view is that some way has to be found to enable community aid to be withheld in cases of violation of human rights.

BST, GMT or CET?

All members of the community, except Germany and Denmark, are applying summer time this year but the periods have not yet been aligned. For 1979 they are as follows:

UK and Irish Republic 18 March (2 am) to 28 October (3 am)

France and Benelux 1 April (1 am) to 30 September (2 am)

Italy 26-27 May (midnight) to 29-30 September (1 am)

Whereas the UK and Irish Republic adopt Greenwich mean time (GMT) in winter and GMT + 1 in summer, the rest of the community works to GMT + 1 (Central European Time) in winter and, except Germany and Denmark, GMT + 2 in summer.

The European commission aims to synchronise the change to and from summer time to overcome the problems created by non-alignment. A draft directive to the council is still under consideration by the UK government and other member states.

ECSC loans £49m to National Coal Board

Nine investment projects in British coal fields are to be funded by a loan of £49 million from the European Coal and Steel Community.

The money will be provided under article 54 of the European Coal and Steel Community treaty and will be disbursed in phase with progress on the projects. The terms will depend upon market conditions at the time of disbursement.

The money will be used to develop new areas of reserves and to increase output of some UK collieries.

New EEC documents

This list of EEC documents was deposited in the house of commons in the seven days to 25 January (commission reference numbers, where appropriate, are given in parentheses). The documents are available for consultation at the European Communities Commission Information Office, 20 Kensington Palace Gardens, London W8 4QQ.

EEC draft instruments

4146/79. Amendment to the proposal for a Council decision adopting a Euratom research programme concerning the decommissioning of nuclear power plants (COM(78)740).

Consultative documents

R/3332/78. Commission communication to the Council concerning forestry policy in the European Community (COM(78)621).

R/3489/78. Research and development programme on the production of hydrogen from water (COM(78)683).

S/2257/78. Relations with the ACP states: Stabex – Inclusion of sesame seed in the list of products covered by the system (COM(78)734).

Scheme for developing countries in 1979

An article in *Trade and Industry*, 22/29 December 1978, described the EEC's 1979 generalised scheme of preferences. *The Official Journal of the European Communities*, 375, of 30 December 1978 containing regulations and decisions applicable for 1979 is now available from HMSO, PO Box 569, London SE1, 01-928 6799, ext. 365.

Rules of competition: exemption renewed for Cecimo exhibition rules

The Official Journal of the European Communities, L11, 17 January 1979, contains a commission decision which renews, for 10 years, the exemption under article 85(3) of the treaty of Rome granted to the European Committee for Co-operation of the Machine Tool Industries (Cecimo) in respect of the rules governing participation by exhibitors at its machine tool exhibitions.

Cecimo is an association, consisting of national trade associations of machine tool manufacturers, which every other year organises an international exhibition of machine tools for metal working (an Emo). The members agree the rules governing Emos and these stipulate that manufacturers of machine tools who wish to exhibit their products at an Emo must handle at least two of the following operations – design, manufacture and sale. They must agree also to refrain from exhibiting their products at any other fair which is in the same year as the Emo and is in a country where the national machine tool manufacturers' association is a Cecimo member, unless special authorisation is obtained from Cecimo. Non-compliance with the rules results in automatic exclusion from an Emo. However, all manufacturers remain free to choose, even in the years when the Emo is held, between exhibiting their products at the

Emo or at other events.

The commission considers that Cecimo's agreement is suitable for exemption because it rationalises participation in fairs and exhibitions, and exhibitors' costs, which are high in this sector, are thereby reduced. The commission is satisfied that this agreement enables users to derive some benefit from the rationalisation, for example, the reduction in overall advertising expenditure helps to keep down the cost price of each article and users travelling costs are reduced because a wide range of goods can be viewed at one exhibition.

However, the commission's decision, which came into effect on 1 January 1979, is made subject to the following condition: Cecimo must inform the commission immediately of all cases of refusal of admission to or exclusion from an Emo; Cecimo and all its EEC members must inform the commission of all other exhibitions which are arranged by them in non-Emo years and must submit to the commission the rules governing admission to these exhibitions.

Kawasaki Motors decision published

Trade and Industry of 22/29 December 1978, page 627, contained an article on a commission decision which imposed a fine of 100,000 Eua on Kawasaki Motors (UK) Ltd for infringements of the competition rules. The text of the decision has now been published in the *Official Journal* L16 of 23 January 1979.

Further information may be obtained from Department of Prices and Consumer Protection, Fair Trading Division 1b, Millbank Tower, Millbank, London SW1P 4QU, tel. 01-211 5122.

EIB loan for Merseyside furniture factory

A loan equivalent to £6 million (8.9 million units of account) has been granted by the European Investment Bank, for the acquisition and equipping of a furniture factory at Runcorn, Merseyside, by Schreiber Industries Ltd. The loan is for 7 years at an interest rate of 8.2 per cent.

The factory will produce bedroom and kitchen furniture. It should be fully operational by 1981 at a fixed investment cost of around £13.2 million.

UK allocated £13m from regional ERDF

Contributions of £13 million from the European regional development fund towards the cost of projects in the UK were announced on 31 January by the European commission. This brings the total fund contribution to UK projects since the inception of the fund in 1975 to £263.1 million.

This is the first allocation from the fund this year. The £13 million relates to one industrial project in Wales and 44 infrastructure projects located in UK assisted areas and is allocated as follows:

Region	£'000
England	
North west	2 711
Yorkshire and Humberside	1 714
South west	816
Total England	5 241
Northern Ireland	1 365
Scotland	4 186
Wales	2 284
Total UK	13 076

North west

Total aid (all projects) £2 710 830

Infrastructure projects
Aid is given under a global application to the following projects:

Cheshire
Ellesmere Port, Mollington to Little Stanney
(duplication of a 914 mm diameter raw water pipeline)
Ellesmere Port
(extension of existing terminal, provision of additional roadway from quay, security fencing and floodlighting)
Halton, Runcorn Dock
(provision of heated transit shed with internal 30 tonne gantry crane, perimeter access road, drainage and floodlighting)
Huntington
(construction of treatment plant extension, installation of filter plate presses with associated pumps and chemical dosing plant and installation of conveyor to sludge lagoon)

Lancashire
Blackpool, Moor Park Avenue/Kincraig Road
(provision of roads and sewers)
Fleetwood
(provision of new transit shed and surfacing of adjacent open area, provision of new stores building)
Hyndburn, Accrington, Huncoat industrial estate
(provision of roads, sewers and services)
Hyndburn, Accrington, Altham industrial estate
(provision of roads and sewers)
Lancaster, Stodday sewage treatment works
(sewage treatment works)

Greater Manchester
Atherton, Wigan Road
(provision of roads and sewers)
Bolton, Grecian Street
(realign and reconstruct road giving access to industrial estate)
Bolton, Lostock Lane
(widen and improve road giving access to industrial estate)
Denton, Windmill Lane industrial estate
(provision of roads and sewers)
Hyde, Hattersley industrial estate
(provision of roads and sewers)

Manchester
1 Rochdale Road, Collyhurst
2 Daisy Works Yard, Longsight
3 Froxmer Street, Gorton
4 Hyde Road, Ardwick
5 Denhill Road, Moss Side
(works to release and service land for industrial development including roadworks, drainage/sewer connections, road crossings and underground mains/service connections)
Trafford Park Village industrial estate
(provision of roads and sewers)

Merseyside
Liverpool Central, Liverpool North, Liverpool Royal
(replacement of electro-mechanical strowger exchanges by semi-electronic TXE 4 exchanges
Liverpool, Garston Docks
(provision of a 32 tonne Scotch derrick, new weighbridge and new road)
Liverpool, Port of Liverpool
(provision of a second set of lock gates)
Wirral, River Dee – Heronbridge
(increase capacity of existing intake off the River Dee by installing additional pumping equipment and a surge protection vessel)

Total aid for 22 infrastructure projects (global application) £2 710 830

Yorkshire and Humberside

Total aid (all projects) £1 713 840

Infrastructure projects
Aid is given under a global application to the following projects:

Humberside
Boothferry, Cowick to Goole
(provision of water main)
Cleethorpes, Immingham Dock
(provision of six electrified capstans for the emergency operation of the lock gates)
Grimsby, Royal Dock
(localisation of hydraulic supplies to lock gates and sluices)
Stallingborough, Kiln Lane
(provision of roadworks, sewers and pumping station)

South Yorkshire
Barnsley, Wombwell, Station Road industrial site
(roadworks, surface and foul water sewers, electricity, gas and water services)
Barnsley, Carlton industrial estate
(extension of gas mains supply)
Doncaster, Carr industrial estate
(site preparation, drainage works and roads)
Doncaster, Carcroft industrial estate
(phase II of preparatory work on estate – construction of bridge, provision of gas, water and electricity supplies)
Doncaster, Kirk Sandall industrial estate
(site preparation, drainage)
Rotherham, Carr Hill industrial scheme
(site preparation, roads, sewers and services)

West Yorkshire
Bradford, Tong Street outfall sewer
(replacement of sewers)
Bradford, Cemetry Lane Road
(provision of roads and sewers on industrial site)
Wakefield, Castleford
(replacement of sewer on industrial site)
Wakefield, Langthwaite Grange industrial estate
(extension of water mains)

Total aid for 14 infrastructure projects (global application) £1 713 840

South west

Total aid (all projects) £816 080

Infrastructure projects
Aid is given under a global application to the following projects:

Cornwall
Cambourne/Redruth sewerage
(construction of new or additional sewers and sewerages)
Penwith, Long Rock industrial site
(provision of roads, surface and foul water sewers and submersible pumping station)

Devon
Bideford, Alverdiscott industrial estate
(extension of existing estate, provision of foul and storm water drainage services)
Tavistock, Plymouth Road
(development of land as industrial estate with access road, sewerage and services)

Total aid for 4 infrastructure projects (global application) £816 080

Scotland

Total aid (all projects) £4 186 600

Infrastructure projects
Highland region, Inverness-shire
(construction of Kessock Road Bridge A9/E15) £3 100 000
Strathclyde region, Cunninghame/Garnock Valley
(sewerage and sewage treatment scheme – phase I) £1 086 600

Wales

Total aid (all projects) £2 283 920

Industry project
Wrexham, The Kellogg Co of Great Britain Ltd
(cereal products) £621 980

Infrastructure project
Gwynedd
(reinforcement of gas transmission system) £1 661 940

Northern Ireland

Total aid (all projects) £1 365 000

Infrastructure project
Aid is given under a global application to the following project:

County Tyrone, Dungannon
(T3 – Dungannon by-pass)

EEC – your questions answered

Can't remember? Ring the EEC Information Unit on 01-215 4301 (six lines) or write to us direct at the Department of Industry, 1 Victoria Street, London SW1H 0ET.
The unit can answer general inquiries about trade and industry matters in the EEC. Small details you have forgotten or more complex questions about new regulations – whatever you need to know, the unit will answer direct or give you a contact for specialist advice.
Here are some of the questions we have answered recently.

Employment aid

Has the EEC made extra funds available to promote employment of young people?
Two new types of aid have been created in addition to existing aids for young people under the European social fund. Finance will be available this year for assistance towards expenditure on schemes granting recruitment premiums and financing job creation projects for people under 25.
Private sector. To be eligible, recruitment premium schemes must create additional jobs in the private sector which provide vocational experience for young people or make it easier in some way to secure stable employment in the future. The same applies to job creation schemes which must also fulfill a public need that would not otherwise have been met.
Public sector. In the public sector only government schemes which provide financial assistance for job creation projects will be eligible. Assistance will not be available for jobs provided by public bodies or central government in their normal establishment or increases in staff.
Availability. Social fund assistance for the new aids will be at a rate of £10 per person per week in Great Britain (£11 in Northern Ireland) for a maximum of 12 months, but as with all other schemes attracting social fund aid, assistance will be provided only for schemes wholly or partly funded by public authorities (central or local government and similar bodies) and cannot exceed 50 per cent of the operating costs except in specified areas of the community.

Inquiries: Department of Employment, Overseas Branch (OB2) 32 St James's Square, London SW1Y 4JR, tel. 01-214 6404.

EEC directives

Where can I obtain copies of EEC directives?
At government bookshops listed below:

London
49 High Holborn
London WC1V 6HB
(personal callers only)

PO Box 569
London SE1 9NH
(postal applications)
01-928 6977

Birmingham
258 Broad Street
Birmingham B1 2HE
021-643 3740

Bristol
Southey House
Wine Street
Bristol BS1 2BQ
0272 24306

Manchester
Brazennose Street
Manchester M60 8AS
061-834 7201

Cardiff
41 The Hayes
Cardiff CF1 1JW
0222 23654

Edinburgh
13a Castle Street
Edinburgh EH2 3AR
031-225 6333

Belfast
80 Chicester Street
Belfast BT1 4JY
0232 34488

You should quote the directive's number and the date of the *Official Journal* in which it has been published.

Reference copies can be seen at the Department of Industry's Statistics and Market Intelligence Library, Export House, 50 Ludgate Hill, London, EC4.

New EEC members

When will Spain, Portugal and Greece join the EEC?
Spain. Spain is not likely to join before 1983. Negotiations formally opened in February, 1975 but detailed discussions do not begin until later this year. Customs union is expected to be the first subject to be covered, although Spain is also aiming at early treatment for social affairs, agriculture and the terms of the transitional period.
Portugal. Portugal is also not expected to join before 1983. Negotiations opened in October 1978 and detailed talks are already under way. Customs union will be covered first, duty-free trade having to some degree been achieved under the existing EEC Portugal free trade agreement.
Greece. Negotiations are almost completed and signature of the treaty of accession should take place mid-1979.

The transitional process for each new member will last about five years, by which time their national legislation will have to be adjusted when necessary to meet the requirements of EEC legislation. It may be some 10 years before all three countries are fully integrated and the community enlarged to 12 members.

Small independent states

Are Monaco, Andorra and San Marino members of the EEC?
Monaco. The Principality of Monaco is not a member, except for customs purposes. Monaco makes no contribution to EEC funds and receives no community aid.
Andorra. Also a principality, governed jointly by France and Spain. No preferential customs treatment is given by the EEC. Andorra's import duties which apply mainly to luxury goods provide the government's main source of income.
San Marino. The Republic of San Marino is not an EEC member, except for customs purposes.

Transport

Have new rules been published governing the transport of dangerous goods by road?
Yes. The 1978 edition of the European agreement on the international carriage of dangerous goods (ADR) (ISBN 011 5504834) incorporating all amendments coming into force up to 1 October 1978 can be obtained from HMSO, price £6.50 net.

Transport by sea

Have new rules been introduced about the carriage of dangerous goods by sea?
Yes. The Merchant Shipping (Dangerous Goods) Rules 1978 were introduced on 29 December 1978 and are published by the Department of Trade in the 'Carriage of Dangerous Goods in Ships: report of the standing advisory committee 1978' – the 'blue book' – third edition (ISBN 011 5121935), available from HMSO (£9.00).

Other than specific exceptions, the dangerous goods rules support compliance with the recommendations of the international maritime dangerous goods (IMDG) code and the 'blue book' is designed to be used in conjunction with the code.

Individual classification and recommendations on packing and stowing of particular dangerous goods, are also given in the IMDG code, available from the Inter-Governmental Maritime Consultative Organisation (IMCO), 101-104 Piccadilly, London W1V 0AE, (£30 plus £2 postage and packing).

EEC information

Free service for businessmen !
The EEC Information Unit helps firms of all types and sizes by answering general questions about EEC membership and by guiding them where necessary to more specialised information sources.
New customers are always welcome, particularly firms new to EEC questions.
The unit's address is : EEC Information Unit, Department of Industry,
1 Victoria Street, London SW1H 0ET. 01-215 4301 (six lines)

Eliminating technical barriers to trade within the EEC Article 100: Checklist of draft and adopted directives

Below we print the usual quarterly revision of our checklist showing the directives proposed, approved, or adopted under Article 100 of the treaty of Rome. The last list was published in *Trade and Industry* of 8 December 1978. A background article on elimination of technical barriers to trade appeared in the August 1974 issue of the European Community Commentary.

A word on terminology. A preliminary draft is really nothing more than a working document of commission working groups, and may appear in any number of revisions. A commission proposal is the final version of the draft as submitted by the commission to the Council of Ministers. It too may undergo revision as a result of representations by member states at council meetings, and may even be remitted to the commission for further elaboration.

A directive does not have direct internal effect, but creates obligations on the governments of the member states to ensure that its requirements are strictly and fully implemented, where necessary by national legislation. Once adopted, council directives may be adapted to technical progress by directives issued either by the commission or if necessary, by the council on a proposal from the commission.

The texts of adopted directives are published in the 'L' (Legislation) series of the *Official Journal of the European Communities*, and the text of commission proposals in the 'C' (Information and notices) series, preliminary drafts, and council revisions of commission proposals are not published. In the list below, the dates of issue of the *Official Journal* containing texts of adopted and proposed directives are given where they are known. The *Journal* has appeared in English only since 1 January 1973, but the English texts of adopted directives published before then (together with all other pre-accession community legislation) were issued in a series of special editions of the *Official Journal* in December 1972. Asterisks indicate where changes in the status of documents have occurred during the past quarter. The *Official Journal* is published by HM Stationery Office.

Inquiries: Mr E. W. Allen, Department of Prices and Consumer Protection, Metrology, Quality Assurance and Standards Division Branch 1, Room 2801, Millbank Tower, Millbank, London SW1P 4QU, tel. 01-211 6228.

Subject	Reference of directive or latest draft received	Status (where applicable)
Motor vehicles		
Type approval	70/156/EEC of 6.2.70	Directive *OJ* 23.2.70
	Com (76) 721 final	Commission amending proposal *OJ* 2.2.77
	78/315/EEC* of 21.12.77	Directive *OJ* 28.3.78
	78/547/EEC of 12.6.78	Directive *OJ* 26.6.78
Rear registration plates	70/222/EEC of 20.3.70	Directive *OJ* 6.4.70
Sound level and exhaust system	70/157/EEC of 6.2.70	Directive *OJ* 23.2.70
	Adapted to technical progress by 73/350/EEC of 7.11.73	Commission directive *OJ* 22.11.73
	77/212/EEC of 8.3.77	Directive amending 70/157/EEC
	77/212/EEC of 8.3.77	Directive amending 70/157/EEC *OJ* 12.3.77
Fuel tanks and rear protective devices	70/221/EEC of 20.3.70	Directive *OJ* 6.4.70
	XII/249/75	Preliminary draft for adaptation to technical progress
	XII/260/75 Rev 2	Preliminary draft for further adaptation to technical progress
Audible warning devices	70/388/EEC of 27.7.70	Directive *OJ* 10.8.70
Air pollution by gases from positive ignition (spark ignition) engines	70/220/EEC of 20.3.70	Directive *OJ* 6.4.70
	Adapted to technical progress by 74/290/EEC of 28.4.74	Directive *OJ* 15.6.74
	77/102/EEC of 30.11.76	Commission directive adapting 70/220/EEC *OJ* 3.2.77 L32
	Com (78) 858 final	Further commission directive adapting 70/220/EEC to technical progress
Steering equipment	70/311/EEC of 8.6.70	Directive *OJ* 18.5.70
Doors	70/387/EEC of 27.7.70	Directive *OJ* 10.8.70
Direction indicator lamps	76/759/EEC of 27.7.76	Directive *OJ* 27.9.76
Suppression of radio interference produced by spark ignition engines	72/245/EEC of 20.6.72	Directive *OJ* 6.7.72
Installation of lighting and light signalling devices	76/756/EEC of 27.7.76	Directive *OJ* 27.9.76
Windscreen-wiper and windscreen-washer systems	Com (76) 571 final	Commission proposal
	78/318/EEC of 21.12.77	Directive *OJ* 28.3.78 and corrigendum *OJ* 19.7.78
Field of vision	Com (75) 619 final	Commission proposal *OJ* C54 of 8.3.76
	77/649/EEC of 27.9.77	Directive *OJ* 19.10.77 and corrigendum *OJ* 19.10.77
Rear-view mirror	71/127/EEC of 1.3.71	Directive *OJ* 22.3.71
	XII/453/76	Preliminary draft
Electrical connections between vehicles and their trailers	Com (68) 633 final	Commission proposal withdrawn
Reverse and speedometer equipment	75/443/EEC of 26.6.75	Further work in hand
Electrical circuits	Work not started	Directive *OJ* 26.7.75
Maximum speed (method of determination)	Work not started	
Braking devices	71/320/EEC of 26.7.71	Directive *OJ* 6.9.71
	Adapted to technical progress by 74/132/EEC of 11.2.74	Commission directive *OJ* 19.3.74
	Adapted further to technical progress by 75/524/EEC of 25.7.75	Commission directive *OJ* 8.9.75 and corrigendum *OJ* 23.9.75
Safety glass	Com (72) 981 final	Commission proposal *OJ* 16.11.72
Interior fittings (interior part of the passenger compartment other than interior rear view mirrors, layout of controls, roof or sliding roof, backrest and rear part of seats)	74/60/EEC of 17.12.73	Directive *OJ* 11.2.74
	78/632/EEC of 19.5.78	Commission directive adapting to Technical Progress Council Directive 74/60/EEC
Arrangement of foot controls	XI/341/75	Preliminary draft
Identification of controls tell-tale and indicators	Com (76) 571 final	Commission proposal
	78/316/EEC	Directive *OJ* 28.3.78 L81/3
Tyres	Com (76) 712 final	Commission proposal *OJ* 14.2.77
Mechanical coupling equipment between vehicles and trailers	XI/14/77	Preliminary draft
Anchorages for safety belts	76/115/EEC of 18.12.75	Directive *OJ* 30.1.76
Emission of pollutants by motor vehicles with diesel fuelled (compression ignition) engines	72/306/EEC of 2.8.72	Directive *OJ* 20.8.72
	Corrigendum to 72/306/EEC	Directive *OJ* 23.11.77
External projections	74/483/EEC of 17.9.74	Directive *OJ* 2.10.74
*Head – restraints of seats	Com (74) 2180 final	Commission proposal *OJ* 14.4.75
	78/932/EEC	Directive *OJ* 20.11.78 L325
Devices to prevent the unauthorised use of motor vehicles	74/61/EEC of 17.12.73	Directive *OJ* 11.2.74
Strength of seats and their anchorages	74/408/EEC of 22.7.74	Directive *OJ* 12.8.74
Behaviour of the steering mechanism in the event of impact	74/297/EEC of 4.6.74	Directive *OJ* 20.6.74
Safety belts and restraint systems	77/541/EEC of 28.6.77	Directive *OJ* 29.8.77
Statutory plates and inscriptions their location and method of attachment	76/114/EEC of 18.12.75	Directive *OJ* 30.1.76
	78/507/EEC of 19.5.78	Commission directive adapting 76/114/EEC to technical progress
Windscreen defrosting and demisting systems	Com (76) 571 final	Commission directive *OJ* 13.6.78
	78/317/EEC of 21.12.77	Commission proposal
Interior fittings – seats (other than strength of seats and anchorages)	Work not yet started *	Directive *OJ* 28.3.78 and corrigendum *OJ* 19.7.78
Special provision for public transport vehicles	XI/347/76	Preliminary draft
Special provisions for taxis	Work not started	
Special provisions for goods vehicles	XI/1042/76	Preliminary draft
Towing devices	77/389/EEC of 18.5.77	Directive *OJ* 13.6.77
Legs of trailers and semi-trailers	XI/508/73 rev 1	Preliminary draft
Reflex reflectors	76/757/EEC of 27.7.76	Directive *OJ* 27.9.76
Front fog lamps and filament lamps	76/762/EEC of 27.7.76	Directive *OJ* 27.9.76
Rear registration plate lamps	76/760/EEC of 27.7.76	Directive *OJ* 27.9.76
End-outline marker lamps, front position (side) lamps, rear position (side) lamps, and stop lamps	76/758/EEC of 27.7.76	Directive *OJ* 27.9.76
Headlamps	76/761/EEC of 27.7.76	Directive *OJ* 27.9.76
* Rear fog lamps	77/538/EEC of 28.6.77	Directive *OJ* 29.8.77 Corrigendum *OJ* 10.10.78 L284
* Parking lamps	77/540/EEC of 28.6.77	Directive *OJ* 29.8.77 Corrigendum *OJ* 10.10.78 L284
* Reversing lamps	77/539/EEC of 28.6.77	Directive *OJ* 29.8.77 Corrigendum *OJ* 10.10.78 L284
Hazard warning devices	Work not started	
Springs	Work not started	
Verification of fuel consumption	XI/702/76	Preliminary draft
Heating systems	Com (76) 702 final	Commission proposal *OJ* 14.2.77
	78/548/EEC of 12.6.78	Directive *OJ* 26.6.78
Wheel guards	Com (76) 702 final	Commission proposal *OJ* 14.2.77
	78/549/EEC of 12.6.78	Directive *OJ* 26.6.78
Weights and dimensions	Com (76) 701 final	Commission proposal *OJ* 20.1.77
Tractors and agricultural machinery		
Type approval	74/150/EEC of 4.3.74	Directive *OJ* 28.3.74
Maximum design speed and load platforms	74/152/EEC of 4.3.74	Directive *OJ* 28.3.74
Certain parts and characteristics	74/151/EEC of 4.3.74	Directive *OJ* 28.3.74
Projecting parts	XI/48/74	Preliminary draft following reconsideration of Com (68) 565 final
Towable load	Com (68) 565 final	Commission proposal referred back for further consideration
Rear-view mirrors	74/346/EEC of 25.6.74	Directive *OJ* 15.7.74
* Lighting and light signalling devices	Com (74) 895 final	Commission proposal *OJ* 13.9.74
	78/933/EEC	Directive *OJ* 20.11.78 L325
Steering equipment	75/321/EEC of 20.5.75	Directive *OJ* 9.6.75
Power connection for lighting and light signalling devices	75/323/EEC of 20.5.75	Directive *OJ* 9.6.75
Suppression of radio interference produced by spark-ignition engines	75/322/EEC of 20.5.75	Directive *OJ* 9.6.75
* Driver's seat	XI/604/76	Preliminary draft
	XI/693/76	Preliminary draft
	C 229/16 (no Com final no. issued)	Commission proposal to council of 26.9.77
	III/403/78	Further preliminary draft
	78/764/EEC of 25.7.78	Directive *OJ* 18.9.78 L225
Passenger seats	76/763/EEC of 27.7.76	Directive *OJ* 27.9.76
Coupling between tractor and trailer	Com (68) 565 final	Commission proposal referred back for further consideration
Braking devices	76/432/EEC of 6.4.76	Directive *OJ* 8.5.76
Safety glass	XI/299/74	Preliminary draft
Emission of pollutants from diesel engines	77/537/EEC of 28.6.77	Directive *OJ* 29.8.77
Tyres	Work not yet started	
Power take-off	III/401/78-FR	Preliminary draft
Field of vision and windscreen wipers	74/347/EEC of 25.6.74	Directive *OJ* 15.7.74
Location and attachment of statutory plates and inscriptions	Work started but no papers yet available	
Length, width and unladen height	Work started but no papers yet available	
Maximum authorised weight on each axle and distribution of weight between axles	Work started but no papers yet available	
Maximum vertical load applied to mechanical coupling devices	XI/509/73	Preliminary draft
Speed governor	Work started but no papers yet available	
Reverse gear	III/247/78	Preliminary draft
* Rollover protection structures	77/536/EEC of 28.6.77	Directive *OJ* 29.8.77
	XI/1036/76 rev 1	Preliminary draft technical annexes
	III/794/77	Modification of XI/1036/76 rev 1
	Com (78) 389 final	Commission proposal *OJ* 11.11.78
Other means of protection against the weather	Work started but no papers yet available	
Location identification and operation of controls	XI/44/74	Preliminary draft
	III/340/78	Further preliminary draft
Coupling hooks	III/1199/77	Preliminary draft
(Front coupling devices)	Com (78) 384 final	Commission proposal
Driver-perceived noise level	77/311/EEC of 29.3.77	Directive *OJ* 28.4.77
* Headlamps and incandescent electric filament lamps	III/245/78-EN	Preliminary draft
	Com (78) 380 final	Commission proposal *OJ* 22.8.78
End-outline marker lamps Front position (side) lamps * Rear position (side) and stop lamps Direction indicator lamps Reflex reflectors Rear registration plate lamps Front fog lamps and filament lamps for such lamps Rear fog lamps Reversing lamps Parking lamps	III/245/78-EN Com (78) 380 final	Preliminary draft Commission proposal *OJ* 22.8.78
Metrological		
General directive	71/316/EEC of 26.7.71	Directive *OJ* 6.9.71
	72/427/EEC of 19.12.72	Amending directive *OJ* 28.12.72
Clinical mercury-in-glass maximum reading thermometers	76/764/EEC of 27.7.76	Directive *OJ* 27.9.76
Medium accuracy bar and cylindrical weights	71/317/EEC of 26.7.71	
Measuring of the standard mass per storage volume of grain	71/347/EEC of 12.10.71	Directive *OJ* 25.10.71
Calibration of the tanks of vessels	71/348/EEC of 12.10.71	Directive *OJ* 25.10.71
Material measures of length	73/362/EEC of 19.11.73	Directive *OJ* 5.12.73
	III/771/77 rev 1,	Preliminary draft
	Com (78) 134 final	Commission directive adapting 73/362/EEC to technical progress
	78/629/EEC of 19.6.78	Commission proposal Directive *OJ* 29.7.78

Subject	Reference of directive or latest draft received	Status (where applicable)
Non-automatic weighing machines	73/360/EEC of 19.11.73 76/696/EEC of 27.7.76	Directive *OJ* 5.12.73 Commission directive Technical progress adaptation *OJ* 27.8.76
Electrical energy meters	78/891/EEC of 4.11.76	Directive *OJ* 4.12.76
Meters for liquids other than water	71/319/EEC of 26.7.71	Directive *OJ* 26.7.71
Measuring systems for liquids other than water	77/313/EEC of 5.4.77	Directive *OJ* 28.4.77
Ancillary equipment for meters for liquids other than water	71/348/EEC of 12.10.71	Directive *OJ* 25.10.71
Gas volume meters	71/318/EEC of 26.7.71 Adapted to technical progress by 74/331/EEC of 12.6.74 XI/355/7F rev 3 78/365/EEC of 31.3.78	Directive *OJ* 6.9.71 Commission directive *OJ* 12.7.74 Preliminary draft second technical progress adaptation Commission directive *OJ* 18.4.78 L104
* Making-up by volume of certain prepackaged liquids	75/106/EEC of 19.12.74 XI/948/76 XI/1082/76 Com (77) 455 final 78/891/EEC	Directive *OJ* 15.2.75 Preliminary draft Preliminary draft Commission amending proposal *OJ* 19.10.77 Commission directive adapting to technical progress the annexes of 75/106/EEC
Bottles used as measuring containers	75/107/EEC of 19.12.74	Directive *OJ* 15.2.75
Cold water meters	75/33/EEC of 17.12.74	Directive *OJ* 20.1.75
Hot water meters	XI/996/76 rev 1 Com (77) 495 final	Preliminary draft Commission proposal
Thermal energy meters	III/214/77	Preliminary draft
Road and rail transport tanks for use as measuring containers		Commission proposal *OJ* 13.9.74 withdrawn *OJ* 3.2.77 C26
Taximeters	77/95/EEC of 21.12.76	Directive *OJ* 31.1.77
Alcoholmeters and alcohol hydrometers	76/765/EEC of 27.7.76 Corrigenda	Directive *OJ* 27.9.76 *OJ* 5.3.77
Alcohol tables	76/766/EEC of 27.7.76	Directive *OJ* 27.9.76
Saccharimeters	Work started but no papers yet available	
Continuous totalising weighing machines	75/410/EEC of 24.6.75	Directive *OJ* 14.7.75
Instruments for determining the fat content of dairy produce	Work started but no papers yet available	
Metallic manometers	III/1919/72	Preliminary draft in abeyance. Further work in hand
Apparatus for measuring arterial pressure	Work started but no papers yet available	
Weights of from 1 mg to 50 kg of above medium accuracy	74/148/EEC of 4.3.74	Directive *OJ* 28.3.74
Instruments for measuring moisture content of grain	XI/86/74	Preliminary draft
Electronic devices incorporated or associated with measuring instruments	XI/667/76 rev 4 III/379/78-F	Preliminary draft Further preliminary draft
Units of measurement	71/354/EEC of 18.10.71 76/770/EEC of 27.7.76 Corringenda to 76/770/EEC III/92/78-EN	Directive *OJ* 29.10.71 Amending directive *OJ* 27.9.76 *OJ* 14.12.76 Preliminary draft
* Check-weighing and grading machines	Com (75) 573 final	Commission proposal *OJ* 8.3.76 Directive adopted but not yet published
* Making up by weight or by volume of certain prepackaged products	76/211/EEC of 20.1.76 III/348/78 78/891/EEC	Directive *OJ* 21.2.76 L46 Preliminary draft for adaptation to technical progress Commission directive *OJ* 4.11.78 adapting to technical progress the technical annexes of 76/211/EEC
Differential pressure gasmeters	Work not yet started	
Ranges of nominal quantities permitted for certain prepackaged products	Com (76) 384 final	Commission proposal *OJ* 18.8.76
Scales of charges for the testing of gas meters	Com (74) 776 final	Commission proposal *OJ* 1.7.74
Instruments for measuring pollution of air	Work not yet started	
Tyre pressure gauges	Work started but no papers yet available	
Electrical		
Electrical equipment designed for use within certain voltage limits	73/23/EEC of 19.2.73	Directive *OJ* 26.3.73
Electro-medical equipment Medical X-ray equipment	Com (74) 2178 final	Commission proposal *OJ* 12.2.75
Electrical equipment for use in potentially explosive atmospheres (framework directive)	76/117/EEC of 18.12.75	Directive *OJ* 30.1.76
Electrical equipment for use in explosive atmospheres (special directive)	XI/508/75 XI/1119/76 rev 1 XI/79/77 XI/80/77 Com (77) 660 final	Preliminary draft Preliminary draft Amendment Amendment Commission proposal *OJ* 6.1.78
Radio interference caused by electrical household appliances, portable tools and similar equipment	76/889/EEC of 4.11.76 Corrigendum	Directive *OJ* 4.12.76 *OJ* 28.4.77 L105
Suppression of radio interference from fluorescent lighting luminaries	76/890/EEC of 4.11.76 Corrigendum	Directive *OJ* 4.12.76 *OJ* 28.4.77 L105
Suppression of radio interference from radio and television sets	Com (73) 569 final	Commission proposal
Suppression of radio interference from industrial scientific and medical equipment	Com (74) 1181 final	Commission proposal *OJ* 6.3.75
* Plugs and sockets	XI/685/76	Preliminary draft withdrawn
Textiles		
Textile names	71/307/EEC of 26.7.71 75/36/EEC of 17.12.74	Directive *OJ* 16.8.71 Directive supplementing 71/307/EEC *OJ* 20.1.75
Quantitative analysis of binary textile fibre mixtures	72/276/EEC of 17.7.72	Directive *OJ* 31.7.72
Quantitative analysis of ternary fibre mixtures	73/44/EEC of 26.2.73	Directive *OJ* 30.3.73
Quantitative analysis mixtures of fibres of the same chemical nature	Work started but no papers yet available	
Elimination of foreign matter	Work started but no papers yet available	
Pressure vessels		
General directive	76/767/EEC of 27.7.76	Directive *OJ* 27.9.76
Seamless steel gas cylinder	Com (72) 1689	Commission proposal
Aerosol dispensers	75/324/EEC of 20.5.75	Directive *OJ* 9.6.75
Seamless aluminium alloy gas cylinders	Com (74) 966 final	Commission proposal *OJ* 13.9.74
Welded unalloyed steel gas cylinders	Com (74) 965 final	Commission proposal *OJ* 13.9.74
Unfired pressure vessels of welded steel	XI/584/75 XI/584/77 rev 2	Preliminary draft Preliminary draft
Shell boilers for producing steam or hot water	Work started but no papers yet available	
Dangerous substances and preparations		
Classification packaging and labelling of dangerous substances	67/548/EEC of 27.6.67 73/146/EEC of 21.5.73 75/409/EEC of 24.6.75 76/907/EEC of 14.7.76 Com (76) 433 final	Directive *OJ* 16.8.67 Amending directive *OJ* 25.6.73 Amending directive *OJ* 14.7.75 Commission directive adapting to technical progress 67/548/EEC *OJ* 30.12.76 Commission amending proposal *OJ* 5.11.76
Classification packaging and labelling of pesticides	Com (74) 2193 final	Commission proposal *OJ* 20.2.75
Approval and putting into circulation of agricultural pesticides	78/631/EEC of 26.6.78	Directive *OJ* 29.7.78
Explosives	15/175/VI/69 Com (76) 427 final 13269/III/70	Preliminary draft Commission proposal Preliminary draft
* Classification, packaging and labelling of dangerous preparations (solvents)	73/173/EEC of 4.6.73 III/Ex. XI/790/76 rev 4 Com (77) 718 final	Directive *OJ* 11.7.73 Draft amending directive Commission final proposal
Classification, packaging and labelling of paints, varnishes, glues and related products	Com (75) 311 final 77/728/EEC of 7.11.77	Commission proposal *OJ* 23.7.75 Directive *OJ* 28.11.77
Classification, packaging and labelling of dangerous products of general use in the home (household preparations)	XI/780/76	Preliminary draft
Corrosives	XI/1/76 rev 1 Work started but no papers yet	Preliminary draft available
Detergents	73/404/EEC of 22.11.73	Directive *OJ* 17.12.73
Methods of testing the biodegradability of anionic surfactants	73/405/EEC of 22.11.73	Directive *OJ* 17.12.73
Methods of testing the biodedgradability of non-ionic surfactants	XI/315/76 III/1293/77	Preliminary draft Preliminary draft
Detergents – toxicity	Work in abeyance	
Restrictions on the marketing and use of certain dangerous substances and preparations	76/769/EEC of 27.7.76	Directive *OJ* 27.9.76
Restrictions on the marketing and use of certain types of asbestos fibre	III/366/77 rev 1	Preliminary draft
Classification, packaging and labelling of dangerous substances not covered by original directive (67/548/EEC)	III/365/77	Preliminary draft
Lifts and lifting apparatus		
Certification and marketing of wire ropes, chains and hooks	73/361/EEC of 19.11.73 76/434/EEC of 13.4.76	Directive *OJ* 5.12.73 Commission directive *OJ* 8.5.76 Adapting 73/361/EEC to technical progress
Common provisions for lifting and mechanical handling appliances (general directive)	Com (75) 336 final	Commission proposal *OJ* 29.9.75
Tower cranes for building work	XI/276/76 rev 1 XI/882/76	Preliminary draft Preliminary draft
Builders' hoists	Work started but no papers yet available	
Conveyor-belts	Work started but no papers yet available	
Electrically operated lifts	Com (75) 336 final	Commission proposal *OJ* 29.9.75
Powered Industrial trucks	XI/768/76	Preliminary draft
Machine tools and machines		
Common provisions for the working of metals, wood, paper and other materials	XI/216/74 Com (77) 656 final	Preliminary draft Commission proposal *OJ* 27.1.78
Grinding wheels and grinding machines	XI/217/74	Preliminary draft
Portable grinding machines	XI/270/75 Com (77) 656 final	Preliminary draft (but now agreed to divide into three separate directives 9/3, 9/4, 9/5) Commission proposal *OJ* 27.1.78
Fixed grinding machines	Work started but no papers yet available	
Grinding wheels	Work started but no papers yet available	
Woodworking machines	Work started but no papers yet available	
Crystal glass		
Crystal glass	69/493/EEC of 15.12.69	Directive *OJ* 29.12.69
Oil pipelines		
Oil pipelines (construction)	Com (68) 640 final	Proposal withdrawn *OJ* 3.2.77 C26
Precious metals		
Articles made from precious metals	Com (75) 607 final	Commission proposal *OJ* 16.1.76
Gas appliances		
Framework directive for gas appliances and associated safety and control devices	Com (74) 2179 final	Commission proposal *OJ* 16.6.75
Instantaneous production of hot water for sanitary purposes	Com (74) 2179 final	Commission proposal *OJ* 16.6.75
Cookers	Work started but no papers yet available	
Central heating boilers	Work started but no papers yet available	
Gas governors	Work started but no papers yet available	
Independent space heaters	Work started but no papers yet available	
Fertilizers		
General directive	76/116/EEC of 18.12.75	Directive *OJ* 30.1.76
* Sampling and methods of analysis	77/535/EEC of 22.6.77 III/213/78 -EN	Directive *OJ* 22.8.77 Preliminary draft adapting 77/535/EEC to technical progress
Marketing of high nitrogen content ammonium nitrate based fertilizer	Com (75) 635 final	Directive adopted but not yet published Commission proposal *OJ* 23.1.76
* Marketing of liquid fertilizers	Work started but no papers yet received	
Gas pipelines		
Gas pipelines (construction)	18/781/III/69	Preliminary draft withdrawn with oil pipelines (see 11/1)
Fuels		
Problem of the lead content of petrol	Com (73) 2050 final 78/611/EEC of 24.6.78	Commission proposal *OJ* 31.1.74 Directive *OJ* 22.7.78
Sulphur content of certain liquid fuels	75/716/EEC of 24.11.75	Directive *OJ* 27.11.75
Use of fuel-oils with aim of decreasing sulphurous emissions	Com (75) 681 final Com (77) 407 final	Commission proposal *OJ* 8.3.76 Commission amending proposal
Rubber and plastics		
Reinforced plastic tanks for carriage of dangerous substances by road	Com (71) 1446 final	Commission proposal *OJ* 15.3.72
Construction materials		
Cement	Work in abeyance	
Ceramic tiles	Work in abeyance	
Flat glass	XI/437/74 III/1417/77 – EN	Preliminary draft Preliminary draft
PVC pipes	Work in abeyance	
Fire resistance	XI/790/75 rev 2 III/1202/77 – EN	Preliminary draft Preliminary draft
Water supply equipment	Work was proposed by the tripartite working group but the project was shelved	
* Construction products (Framework directive)	III/1098/77 – EN III/1098/77 – E rev 1 III/613/78 – E III/1098/77 – F rev 2 Com (78) 449 final	Preliminary draft Preliminary draft Draft council resolution on product priorities Further preliminary draft Commission final proposal
Safety of glass products intended for use in buildings	III/1438/77 – EN	Preliminary draft
Building and civil engineering equipment and machines		
General directive Determination of the noise produced by construction plant and equipment (alteration in title) Permissible sound level for pneumatic concrete-breakers and jackhammers	Com (74) 2195 final	Commission proposal *OJ* 14.4.75
Permissible sound emission level for tower cranes	Com (75) 558 final	Commission proposal *OJ* 8.3.76
Permissible sound level of grass cutting machines	XI/28/75 rev 1 III/1584/77 – EN	Preliminary draft Preliminary draft
Permissible sound emission level for current generators for welding Permissible sound emission level for current generators for power supply	Com (75) 558 final	Commission proposal *OJ* 8.3.76
Noise emitted by air compressors	Env/168/77 rev 1 Com (78) 121 final	Preliminary draft Commission proposal *OJ* 19.4.78 C94
Permissible sound emission level for dozers, loaders and excavators	Env/487/78 Env/488/78	Preliminary draft Preliminary draft
(Site safety)		
Roll-over protective structures	XI/554/75	Preliminary draft
Falling-object protective structures	XI/555/75	Preliminary draft
Dimensions of operators' cabins	XI/556/75	Preliminary draft

Subject	Reference of directive or latest draft received	Status (where applicable)
Protecting guards and shields (Road safety)	XI/557/75 Work started but no papers yet received	Preliminary draft
Tower cranes: safety aspects	Work started but no papers yet received	
Mopeds		
Type approval	Com (72) 1645 final	Commission proposal
	Com (73) 1732 final	Commission amending proposal
Engines	Work started but no papers yet received	
Noise	Work started but no papers yet received	
Braking devices	XI/710/75	Preliminary draft
Motor cycles		
Type approval	Com (74) 2177 final	Commission proposal OJ 20.2.75
Permissible sound level and exhaust system	Com (75) 634 final	Commission proposal OJ 8.3.76 C54 Directive adopted but not yet published
Fuel system integrity	XI/567/75	Preliminary draft
Non-military arms and ammunition	Work started but no papers yet received	
Firefighting equipment		
Portable fire extinguishers	Work started but no papers yet received	
Metal scaffolding		
Working metal scaffolds	XI/34/76	Preliminary draft suspended sine die
Packaging materials	Work not yet started	
Educational materials	Work not yet started	
Equipment using ionising rays	Work started but no papers yet received	
Protective clothing and equipment		
Protective helmets (industrial)	Work started but no papers yet received	
Safety helmets for motor vehicle drivers and their passengers	XI/227/75	Preliminary draft
Respiratory protective devices	Work started but no papers yet received	
Industrial safety belts and harnesses	Work started but no papers yet received	
Eye protectors	Work started but no papers yet received	
Protective footwear	Work started but no papers yet received	
Boats and their fittings		
Type approval	Com (76) 393 final	Commission proposal OJ 24.8.76
Pleasure craft made of reinforced plastic	XI/592/74	Preliminary draft
Cosmetics		
Cosmetic products	76/768/EEC of 27.7.76	Directive OJ 27.9.76
Toys		
Toys safety requirements	XI/288/74	Preliminary draft
Noise emitted by domestic appliances	Env/45/78 – FR	Preliminary draft

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Checklist of EEC company law harmonisation programme

The following checklist gives a brief resume of the current position on EEC legislation or proposed legislation on company law. It is hoped to update this list at six-monthly intervals.

Second directive (company capital). The directive was formally adopted by the council of ministers on 13 December 1976. A consultative document on the proposed changes to UK company law was issued by the Department of Trade in July 1977 ('Implementation of the second EEC directive on company law'), and a Companies Bill which seeks to implement the directive was introduced into the house of commons in November 1978.

Third directive (internal mergers). The directive was adopted in October 1978. Member states have three years in which to implement the directive and the Department of Trade will begin consultations on proposals for implementing the directive in due course.

Fourth directive (company accounts). The directive was adopted in July 1978. It is expected that most companies in the UK will have to produce their accounts in conformity with the directive from 1982. The Department of Trade hopes to publish a consultative document in March on proposals to implement the directive in the UK.

Draft fifth directive (company structure and administration). The commission's 'green paper' on the board structure and employee participation issues (raised by the draft directive) was published in November 1975. The draft will be revised to take into account comments of the European assembly and the economic and social committee, and views expressed on the green paper.

Draft sixth directive (prospectuses issued when shares are quoted on stock exchange). The third reading by a council of ministers working party has now been completed. Discussion of outstanding points will start this month.

Draft seventh directive (group accounts). A council working group started the first reading in September 1978 which is expected to be completed early in 1979. It is possible that the working group might conclude its work by the end of 1979.

Draft eighth directive (qualification of auditors). A draft directive was published in April 1978.

Wurdinger report (proposal for a draft directive on related companies and groups). A draft directive is being prepared following a preliminary discussion by a commission working group.

Pennington report (proposals for a draft directive on takeovers). A commission working party has considered Professor Pennington's report (which includes a draft directive) and is now drafting its own proposals. It is unlikely that this draft will be published in the near future.

Draft directive on the co-ordination of laws etc on collective investment undertakings for transferable securities (unit trusts). A council working group began its first reading of the draft directive in September 1977.

Co-ordination of laws governing the taking up of the activity of a stockbroker. A commission working group held one meeting in November 1978 to discuss a paper drawn up by the commission. The discussion revealed little enthusiasm. The commission's further initiative is awaited.

Draft directive on admission of securities to official stock exchange quotation. It is expected that the directive will be formally approved shortly. Member states have two years in which to implement it.

Draft directive on scissions. A draft directive arising from the third directive was drawn up by the commission in September 1978 and a council working party began discussions. The directive, which concerns the transfer of assets and liabilities from one company to a number of other companies, is unlikely to have much impact in the UK.

Draft directive on the annual accounts of credit institutions. A commission working party began discussion, in November 1978, of a preliminary draft of a proposal for a directive drawn up by the EEC accountants study group in October 1977. It will be some time before the draft for a directive is finalised.

European companies statute. A text revised in the light of the opinions of the assembly and of the economic and social committee was presented by the commission to the council in May 1975. An ad hoc working group considered the political implications of the statute and has reported its findings to Coreper. The council working group has begun the first reading, confining itself to the general provisions. Progress during 1978 has been slow.

European co-operation grouping. The commission published an amended draft regulation in April 1978, following the receipt of the opinions of the assembly and the economic and social committee. No dates for discussion have been arranged yet.

Draft convention of international mergers. The second reading is expected to be completed in March and the third reading is due to begin in September this year.

Draft bankruptcy convention. The convention is intended to provide for unity and universality of bankruptcy, liquidation etc. throughout the EEC. Substantive negotiations are now in progress based on the observations submitted by the three new member states. Negotiations are expected to be completed by April.

Community patent convention, European patent convention, and patent co-operation treaty. The community patent convention (CPC) and the European patent convention (EPC) provide a complete body of European patent law and procedure. The EPC entered into force on 7 October 1977. So far nine states have ratified it. The European Patent Office opened for the filing of applications on 1 June 1978. The CPC will probably not come into force until 1982-83. Three working parties have been set up to make preparations. The patent co-operation treaty (PCT) is another worldwide patent treaty, but of more limited scope than the EPC or CPC, which came into force on 24 January 1978, with 1 June 1978 being the date from which applications could be filed.

Insider dealing. The commission held a preliminary working party meeting in 1976. A further meeting may be held this year.

Canvassing of securities. The commission has produced a draft directive, which has been discussed in a working group. The draft has not aroused great enthusiasm. The commissions further proposals are awaited.

Continuing disclosure of information concerning securities admitted to listing on a stock exchange. The commission has submitted a draft directive to the council of ministers, which is being considered by the assembly and the economic and social committee.

Dissolution and liquidation of limited companies. Preliminary discussion of the Scholten report (which contains a draft directive on the subject) began in November 1977. The discussions continued, completing the first reading. A revised draft will be prepared before the second reading starts.

Inquiries: 01-215 5628.

Overseas trade news

Government boosts UK-China trade

A concerted thrust to develop collaboration with China is being made by the government, minister for industry Alan Williams said at a 'business perspectives' conference in London on 6 February.

Mr Williams said that he was glad to see that many areas of industry were already responding to the challenge. But Britain would have to ensure that competitors were not quicker off the mark, he warned.

He pointed out that the visit of Vice-Premier Wang Zhen last November, had been a powerful catalyst. 'We were able to assure the vice-premier, who has overall responsibility for China's industrial development, that British industry was competitive, technologically competent and willing,' he said. As a first step, agreement had been reached in principle to negotiate a long-term economic co-operation agreement. The aim was to achieve between now and 1985 a substantially increased level of two-way trade. The figures first discussed during Vice-Premier Wang's visit has been between £4,000 million and £5,000 million, but he was confident that the eventual outcome would be substantially higher.

Ready to co-operate

Britain's readiness to co-operate in China's technological development had been demonstrated by the signing during Wang Zhen's visit of a science and technology agreement. This was a broad and flexible framework agreement designed to encourage the growth of co-operation in various fields of science and technology by means of exchanges of visits and of scientific and technical information. These had already started and further visits were planned to take place in the next few months.

Since last October the staff of the commercial section of Britain's embassy in Peking had been roughly doubled, Mr Williams pointed out. The efforts of the Department of Trade, his department and other ministries had been substantially strengthened. The government would provide industry with all the support it needed and would be happy to rise to the new demands with diligence and hopefully with imagination.

The scope for British industry was considerable, he continued. The Chinese would consider buying any advanced equipment and technology which would help them attain their existing development goals.

Britain had the full range of high-technology plant and equipment which China needed. This had already been demonstrated to the Chinese in the areas of mining machinery and process plant. Britain possessed particular experience in modernising, to the most up-to-date standards, old established sectors such as railways, and coalmining as well as developing new areas such as aerospace, and scientific equipment.

Varley taking industry leaders to China

Eric Varley, Secretary of State for Industry, is to lead a party of senior officials and representatives of British industry which is to visit China from 24 February to 5 March. Purpose of the visit is to advance the UK's role in China's industrialisation. Mr Varley's host in China will be Vice-Premier Wang Zhen who visited the UK last November.

Top officials in the party will include Mr A. J. Lippitt and Mr R. E. Dearing deputy secretaries in the Department of Industry, Senior representatives of British industry accompanying Mr Varley are: Lord Nelson of Stafford, president of the Sino-British Trade Council, chairman of GEC; Sir John Buckley, chairman, Davy International; Sir Charles Villiers, chairman, British Steel Corporation; Mr M. Casey, chief executive, British Shipbuilders; Mr A. H. C. Greenwood, deputy chairman, British Aerospace; Mr E. A. Hammond, executive counsellor, Electrical Electronic Telecommunications and Plumbing Union; Mr J. R. Mayhew-Sanders, chairman, John Brown Engineering group; Mr L. J. Mills, board member, National Coal Board; Mr D. J. Pepper, vice-chairman, Rolls-Royce; Mr D. A. S. Plastow, managing director, Rolls-Royce Motors; and Mr W. A. de Vigier, chairman and managing director, Acrow (Engineers).

Mr Varley will also visit Singapore on 20 February and Hong Kong on 21 February.

Britain and China sign minerals agreement

Britain and China have signed an agreement to collaborate in developing China's non-ferrous mineral resources. This was announced on 7 February following the return of a UK delegation to China led by officials of the Department of Industry. The mission, which went at the invitation of Tang Ke, minister for the metallurgical industry, was led by the department's Ivor Lightman and consisted of representatives of six British companies and the Institute of Geological Sciences.

Exports for Britain

The agreement to collaborate envisages providing modern technology and equipment as well as setting up financial arrangements and compensation trading. It could lead to £1 billion-worth of export orders for Britain.

A number of specific projects are involved. These cover cobalt, copper, tin, tungsten and two lead/zinc projects. Two of the British companies represented on the mission – Charter-CJB Mineral Services and Seltrust Engineering – will submit by 31 March proposals for collaboration in these six projects.

Discussions with companies will take place in the United Kingdom on four more projects, including one for technical assistance on geological exploration, iron ore mining and rare earths concentration and recovery. Further discussions on collaboration, on further geological exploration, on compensation trading arrangements and on joint venture projects have been agreed.

Vice-Premier Wang Zhen (right) with Ivar Lightman of the Department of Industry.

Industry wins £23m orders from aid for overseas

British industry received over £23 million in December from orders arising from aid grants and loans to the developing countries made by the Ministry of Overseas Development and administered by the Crown Agents.

Among the largest contracts for goods over £20,000 accepted for financing in December, including earlier contracts now accepted for reimbursement from aid funds were a crane and spares for Belize from NEI Clarke Chapman Cranes, Leeds; conductors for Ecuador from BICC Metals Ltd, Prescot, Merseyside; grinding machinery for India from Keighley Grinders Ltd, Keighley, west Yorkshire; plasters and bandages for Jamaica from Smith and Nephew Ltd, Welwyn Garden City; water/foam tenders for Pakistan from HCB Angus Ltd, Totton; diesel engine spares for Sri Lanka from Paxman Diesels Ltd, Colchester; 5000 tonnes of cement for Sudan from Blue Circle Industries Ltd, London; a vertical boring and turning lathe for Tanzania from WickmanMachine Tools Ltd, Coventry; tubes and chain for a cane sugar factory in Zambia from Tate and Lyle Engineering, Bromley; and steel for Zambia from British Steel Corporation, Warrington.

Aid for Botswana housing scheme approved

A grant of almost £1 million to help a project to meet the demand for low-cost housing in Lobatse, south-eastern Botswana has been approved by Judith Hart, Minister for Overseas Development. The project will provide 1000 site and service plots and 100 fully serviced plots.

The site and service plots, which provide the land and basic necessities for housing development, will bring about improved facilities, such as water, sanitation, roads, power, street lighting and community services. A significant feature of the scheme is the provision of a portion of the grant for basic materials, which will be on-lent on soft terms to tenants who need help to pay for their homes.

The population of Lobatse, about 15 000, is rising at a rate of 5 per cent a year, and it is estimated that 3200 more housing plots will be needed to meet this demand. The project is part of a physical development programme for the town, which Britain is to support with further aid funds.

Good prospects for UK-Romanian trade

Good prospects for further development and diversification in UK-Romanian trade during the coming year were noted by the sixth session of the UK-Romanian joint commission in London from 29 January to 2 February.

The commission reviewed progress in 1978 both on the general development of trade and in the development of economic industrial, technological and scientific co-operation between the two countries.

The sixth UK-Romania joint commission met in London under the chairmanship of William Knighton (right) and Gheorghe Petrescu.

Positive achievements in the development of bilateral trade in the past year were noted and both delegations expressed the desire of their governments to achieve a more rapid expansion of trade. The commission saw particularly promising prospects in the electronic and electrical, power generation, aviation, coal and energy, metallurgical, engineering, machine tool, chemical and agricultural industries. The importance of developing third-country co-operation projects was also emphasised.

The joint commission met under the joint chairmanship of William Knighton, deputy secretary at the Department of Trade, and Gheorghe Petrescu, Minister State Secretary at the Ministry of Machine Building. The UK delegation included representatives from the energy (coal and nuclear), avionics, chemicals, process plant and electronics industries as well as government officials.

The next meeting of the joint commission will be held in Bucharest during the first quarter of 1980.

Offshore co-operation between Europe and Mexico

Joint ventures between European and Mexican companies in the offshore supplies industry are expected as a result of a European mission to Mexico City.

Thirty-five member companies of the Offshore Centre, London, have completed a five-day business development meeting in Mexico City. It is said to have been the first co-ordinated European group to visit Mexico. Most sections of the industry were represented.

Reporting on the meeting, Walter Drysdale, director of the centre, spoke of a good reception given to the mission by Petroleos Mexicanos (Pemex). Valuable contacts were made and a clear picture was obtained of the requirements and methods of working of Pemex, he said.

Support was obtained from Nacional Financiera in the promotion of joint ventures between companies in the group and Mexican firms.

'Resulting from the meetings with Pemex and Nacional Financiera, useful contacts were made with Mexican companies, which will lead to investment in Mexico by European companies through joint ventures and technical co-operation,' Mr Drysdale said.

'The five-day meeting was undoubtedly a most successful "door opening" exercise to participation in the development of the energy programme of Mexico.'

Czechoslovakia gets £4m line of credit

A £4 million line of credit which National Westminster Bank has made available to Ceskoslovenska Obchodni Banka has been backed by the Export Credits Guarantee Department.

The loan will enable buyers in Czechoslovakia to place orders in the UK for capital goods and associated services. UK suppliers will receive 85 per cent of the contract value from the loan: the remaining 15 per cent is payable from the buyers' own resources. A contract must have a minimum value of £20,000 and be placed by 25 January 1980.

Contracts placed under previous ECGD guaranteed lines of credit made available by National Westminster Bank to Ceskoslovenska Obchodni Banka have included measuring gauges, carpet tufting machinery and earth-moving equipment.

Further details: Mr D. De Silva, ECGD, tel. 01-606 6699 ext. 7575, or Mr M. L. Preece, National Westminster Bank, tel. 01-588 6122 ext. 2198.

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Value of the Bahamasair order amounts to about £9 million.

Bahamasair orders four HS 748s

British Aerospace Aircraft Group, Manchester Division, has signed a contract with Bahamasair for the supply of four new HS 748 airliners, one of which will have a large freight door. These aircraft will replace this airline's existing turboprop fleet of FH-227s and a Twin Otter.

The 748s will operate to the out islands in the Bahamas archipelago. The first aircraft is due for delivery this month. Until the second aircraft is available for delivery in April, a demonstration 748 is being provided by British Aerospace, Manchester.

This order completes a series of contracts in the Caribbean. By the middle of this year, there will be 24 HS 748s operating in the Bahamas, Trinidad, Venezuela, Guyana and other countries in this area.

HS 125 for Yemen

The Shaher Trading Co of Sanaa, in the Yemen Arab Republic, has taken delivery of a HS 125-700 aircraft, the latest version of the popular business jet from British Aerospace – the first new HS 125 to be sold in the Yemen.

Total sales of the HS 125 now stand at 423.

Export control on parts for frequency changers

Exports of parts, components and sub-assemblies of certain frequency changers have been brought under control by an order made by the Secretary of State for Trade on 12 February amending the Export of Goods (Control) Order 1978. The order relates to frequency changers (devices used in a variety of industries for precision control of the speed of electric motors) capable of a multi-phase electrical output of between 600 and 2000 Hz, which were brought under control on 9 November.

At the same time an open general export licence has been issued permitting the export of such parts, components and sub-assemblies if customs is satisfied they are not intended to be used in assembling these frequency changers.

EXPORT LICENCE – PARTS AND COMPONENTS OF FREQUENCY CHANGERS

Open General Export Licence dated 12 February 1979 granted by the Secretary of State.

The Secretary of State, in exercise of powers conferred by Article 3 of the Export of Goods (Control) Order 1978 (a), hereby grants an Open General Export Licence authorising the exportation from the United Kingdom to any destination other than to any destination in Southern Rhodesia, of parts, components and sub-assemblies for frequency changers specified in Group 3C of Part II of Schedule 1 and not specified elsewhere in Schedule 1 which the Commissioners of Customs and Excise are satisfied are not intended to be used in assembling any such frequency changer.

This licence shall come into operation on 12 February 1979.

12 February 1979.

An Under-Secretary Department of Trade

(a) S.I. 1978/796.

The amending order will be available shortly from HMSO. Copies of the open general export licence are available on demand from Export Licensing Branch, Department of Trade, Sanctuary Buildings, 20 Great Smith Street, London SW1P 3DB.

Middle East materials handling show

MEmat '79, the Middle East materials handling show to take place in Bahrain later this year, has received the backing of the British Overseas Trade Board. British participation is being sponsored by the Birmingham Engineering and Building Centre, which has now received support under the BOTB joint venture scheme.

The exhibition, which takes place from 22 to 25 October, already has commitments from many other west European countries, the Middle and Far East, Australasia and the United States of America.

Already 73 British companies have expressed their interest in the exhibition.

Hints to exporters booklets

Revised editions of the booklets on Paraguay and Singapore.

British exporters can order these booklets by post, accompanied by the appropriate remittance, from the Department of Trade, Publications Sales Unit, Export House, 50 Ludgate Hill, London EC4M 7HU at £1 per copy, plus postage and packing as follows: 1 copy 20p, 2 to 4 copies 30p, 5 to 7 copies 40p, more than 7 post free.

Copies may also be purchased by personal callers at Export House and at the Offices of the Department of Industry at Newcastle upon Tyne, Cockermouth, Manchester, Leeds, Nottingham, Birmingham, Bristol; from the Scottish and Welsh Offices and from the Department of Commerce Belfast.

Notices to importers

Issued by the Department of Trade. Telephone inquiries should be addressed to the number at the end of the notice.

1729: imports of certain shirts from the Philippines

As already announced, under the terms of the EEC/Philippines textile agreement, the EEC has negotiated with the Philippines a restriction on imports into the UK of certain woven shirts falling within tariff heading 61.03 and originating in the Philippines.

Pending enactment of community legislation, the provisions of the arrangement are being operated de facto as set out below. The shirts affected and the quota established for such goods exported from the Philippines in 1979 are as follows:

Category no./Tariff heading/Description	Quantity
8/ex 61.03 Men's and boys' shirts of cotton, of man-made textile fibres, of wool or of fine animal hair	265,000 pieces

Imports of these shirts from the Philippines were already subject to UK surveillance licensing. Current surveillance licences issued under these arrangements were revoked with effect from 13 February 1979.

Licensing arrangements

The Filipino authorities will administer the quota by issuing to their exporters export certificates endorsed to the effect that the consignments have been debited against the agreed ceiling for exports to the UK. These certificates should be submitted by UK importers, in support of a completed form ILB/A, to Import Licensing Branch, which will issue import licences up to the quota limit.

Goods in transit

The Filipino authorities will issue duly endorsed export certificates for these newly restricted goods for consignments exported from the Philippines on or after 10 February 1979. Goods in transit to the UK on or before 9 February will be licensed without the requirement for an export certificate to be produced, provided that satisfactory evidence (ie bill of lading or airway bill) of the date of shipment of the goods is supplied to Import Licensing Branch in support of a completed form ILB/A; applications in respect of such goods should be sent to reach Import Licensing Branch not later than 2 March 1979. Only goods which were shipped from the Philippines after 31 December 1978 will count against the agreed quota.

Imports for re-export

Imports of restricted textiles will not be set off against the quotas if they are re-exported in the same state or after limited processing.

The general import licensing arrangements

for restricted textiles re-exported from the UK are set out in NTI 1441.

Inquiries: Import Licensing Branch, tel. 01-603 4644 ext. 367.

1730: imports of certain trousers from India

Notice to importers 1727, *Trade and Industry*, 19 January 1979, announced that restrictions on imports of certain woven trousers from India had been removed. However, following consultation under the terms of the EEC/Indian textile agreement the EEC has now negotiated with India a further restriction on imports of woven trousers falling within tariff headings 61.01 and 61.02 and originating in India.

Pending enactment of community legislation, the provisions of the arrangement are being operated de facto as set out below. The trousers affected and the quota established for such goods exported from India in 1979 are as follows:

Category no./Tariff heading/Description	Quantity
6/ex 61.01 Men's and boys' woven trousers, breeches and shorts, of cotton, of man-made textile fibres, of wool or of fine animal hair, *other than garments of textile fabric of heading no. 59.08, 59.11 or 59.12*	165 000 pieces
6/ex 61.02 Women's, girls' and infants' woven trousers and slacks, of cotton, of man-made textile fibres, of wool or of fine animal hair, *other than babies' garments, garments for girls up to and including commercial size 86 and other than garments of textile fabric of heading no. 59.08, 59.11 or 59.12*	

Imports of these trousers from India were already subject to UK surveillance licensing. Current surveillance licences issued under these arrangements were revoked with effect from 13 February 1979.

Licensing arrangements

The Indian authorities will administer the quota by issuing to their exporters export certificates endorsed to the effect that the consignments have been debited against the agreed ceiling for exports to the UK. These certificates should be submitted by UK importers, in support of a completed form ILB/A, to Import Licensing Branch, which will issue import licences up to the quota limit.

Goods in transit

The Indian authorities will issue duly endorsed export certificates for these newly restricted goods for consignments exported from India on or after 13 February 1979. Goods in transit to the UK on or before 12 February will be licensed without the requirement for an export certificate to be produced, provided that satisfactory evidence (ie bill of lading or airway bill) of the date of shipment of the goods is supplied to Import Licensing Branch in support of a completed form ILB/A; applications in respect of such goods should be sent to reach Import Licensing Branch not later than 2 March 1979.

Imports for re-export

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Packaging in the UK has grown over the postwar period into a £3 billion industry. This growth, faster than manufacturing industry as a whole, is marked by a great deal of technological innovation. It has led not only to new types of packaging but to the creation of new industries. Les Huckfield, Parliamentary Under-Secretary of State at the Department of Industry, introduces *Trade and Industry*'s special report on the packaging sector with an appreciation of the sector's contribution to the government's Industrial Strategy.

Since the war, the UK packaging sector has expanded rapidly, growing much faster than manufacturing industry as a whole. As this report shows, packaging involves a wide range of industries – paper and board, plastics, metals and glass – all of vital importance to our economy. The industry has an outstanding record of technological innovation.

Skilful packaging is an important ingredient in successful marketing, and to compete at home and abroad, British goods need to be vigorously marketed. The government recognises this important contribution to the Industrial Strategy and offers a wide range of incentives to encourage investment leading to greater efficiency and competitiveness. Some firms in the industry are already taking advantage of these incentives.

In recent years concern has been expressed by consumer interests and environmentalists about over-packaging, inconvenient packaging and misleading packaging. The government well understands this and has been taking a close interest in this field. I and my colleagues, Ken Marks, Parliamentary Under-Secretary of State at the Department of the Environment, and Robert Maclennan, Parliamentary Under-Secretary of State at the Department of Prices and Consumer Protection, have encouraged the work of the waste management advisory council in this important area.

We are sure the council can do much to help inform the public and at the same time be responsive to the recent concern about the development of packaging. This had already been demonstrated by the council's first report in 1976 which recommended that a self-disciplinary code for packaging be established, with an independent body to oversee and monitor the working of the code. Last year the packaging code was established by the industry, and I believe it can do a great deal to enhance good packaging practice.

Packaging is an industry of rapid change. In the last decade, the greatest rates of growth were achieved by the 'newer' materials, notably aerosols and plastic materials and laminates. The more traditional materials, particularly pulp-based packaging, have come under increasing pressure.

The next decade will see further changes in the industry; it will have to respond to what society – both consumer and businessmen – wants, what it can afford, and what can technically be achieved. I have no doubt that it will do so with the same enterprise and vigour it has shown in the past.

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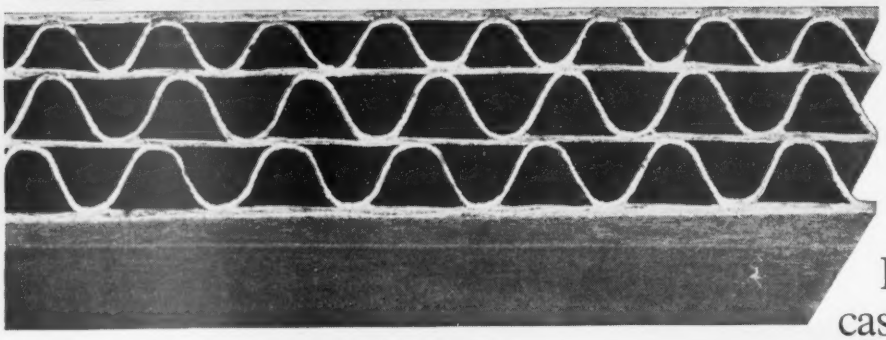

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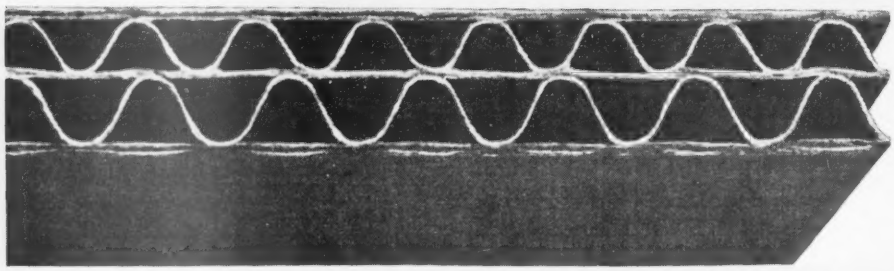

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An indispensable function

Recent industrial upheaval has thrown into focus the indispensability of packaging materials and containers. Inability to move empty cans means inability to supply a product. Packaging's essential role in our present industrialised society is described by packaging consultant James MacChesney, a former council chairman of the Institute of Packaging. Along with a continuing prospect for growth, he sees signs that attitudes to packaging are changing.

Self-help boosted packaging industry

To many people, a pack is something to be opened and thrown away, not always in a suitable place. To others, packaging is a symbol of the wasteful throw-away society, consuming vast quantities of scarce, non-renewable resources, and contributing to rising prices and environmental pollution. A manufacturer of consumer goods may see packaging as a necessary evil, adding to his costs without, apparently, contributing to the value of his product.

There are signs that some of these attitudes are changing. Consumer and conservationist groups now have a better appreciation of each other's viewpoints and of the place of packaging in society. The public, too, appears to have a greater awareness of the subject, and it is more widely appreciated that packaging performs several valuable functions in preserving and protecting goods, making storage and movement easier, stimulating sales and providing employment.

Perhaps the most positive outcome is the development of several schemes to increase the use of recycled packaging materials, including the 'bottle bank', the recovery and re-use of tin and steel from discarded cans, the manufacture of fence-posts from plastic waste, and government grants to encourage the paper industry to install extra waste paper processing capacity. The country's record of re-use of waste was not bad before – about 40 per cent of paper and board made in the UK contained recycled fibre, and schemes such as these can do nothing but good.

Possibly as a response to public criticisms, packaging manufacturers have recently taken a number of other measures. Among them is the development of an easy-open beer can end which has no loose tag to become dangerous litter. This new end is reported to be cheaper than the 'ring-pull' end. Another measure is the introduction by some retail chains of simple print designs which reduce the printing to one or two colours. In fact, with modern technology, the cost difference between one or two colours and four or six is small when related to a single container, but it is important for manufacturers to demonstrate to consumers that every effort is being made to keep costs down.

The packaging industry is large, with a turnover in 1978 of nearly £3,000 million in containers and materials and £130 million in machinery. It uses a wide range of materials and is responsible for a great deal of technological development of service in other fields. The industry is especially difficult to define because many of the largest producers have major interests in other industrial areas. Its diversity is such that some 80 trade associations claim an interest.

Packaging is a highly competitive industry – an important factor in containing price increases. In addition, there is competition between different types of pack in many markets. Perhaps the most obvious example is beer, where in the mid-1950s cans successfully entered a market previously held by glass.

The plastics industry tackled the beer market in the mid-1970s, but had no more than a precarious toe-hold. There are many other instances, including the introduction of very tough fibreboards in competition with wood for heavy-duty packs; the increasing use of plastics for soft drinks, even the carbonated types; the development of pumps in competition with aerosols; and, in the cushioning market, fierce competition involving wood wool, shredded paper, corrugated paper and board, and a growing range of materials made from plastics.

Since the war, the packaging industry has been growing rapidly – considerably faster than that of manufacturing industry as a whole. Several factors have contributed to this, including population growth. Competition within the industry, together with keen selling, has led to the packing of products never before prepacked for retail sale, such as nails and other small hardwares. Technical

Professionalism in packaging

Founded in 1947, the Institute of Packaging is an independent non-profit making professional organisation for packaging technologists and managers with some 3300 individual members. Its programme of activity includes the sponsoring of British joint ventures at overseas packaging exhibitions on behalf of the British Overseas Trade Board. The institute is also the founder and principal sponsor of Pakex – the international packaging exhibition held every three years at Birmingham's national exhibition centre.

The institute plays a leading role in packaging education. This is expressed in the conduct or sponsorship of packaging conferences, seminars, text books, a correspondence course, evening classes and a residential education programme. The latter covers some 10 courses per year, providing more detailed and specific coverage of the specialist aspects of packaging. In the current year, in addition to the general course on packaging principles and practice from 26 March to 6 April,

These courses provide presentations of packaging information for those entering the profession, including individuals studying for the institute's qualifying examination; changing or expanding their interests within packaging; or seeking an update of knowledge, or to gain general appreciation of packaging.

A copy of the institute's education programme, or further information on its educational activities, can be obtained from the Education Officer, The Institute of Packaging, Fountain House, 1A Elm Park, Stanmore, Middlesex HA7 4BZ, tel. 01-954 6277.

Details

Packaging of chemicals, industrial solids and liquids, 11-13 February
Transit and export packaging, 14-16 February
Printing for packaging, 5-9 March
Packaging machinery, 29 April-4 May
Packaging of cosmetics and toiletries, 3-5 June
Adhesives in packaging, 16-18 September
Specifications and quality control, 19-21 September
Packaging of foodstuffs, 14-19 October
Flexible packaging, 4-9 November

development has encouraged the growth of new industries – frozen foods for example. The need has also been the need for packaging to carry our increasing exports, involving both retail packaging and heavy-duty outer packaging. There seems little doubt that this postwar growth is due mainly to fundamental changes in retail selling methods and towards consumer convenience.

Over the last 30 years or so we have seen a change from traditional retail methods to self-service selling in foods and many other products. This was brought about by the need to economise in labour to keep retail prices low, and to enable retailers to cope with the greatly increased volume of trade which resulted from rising standards of living. While it may be difficult to remember (or imagine) the old-fashioned grocery shop, it is obvious that high-speed factory packing of foods is much more economical than the alternative, which is to employ shop assistants to weigh and wrap each customer's order. Further, factory-packing is more hygienic and leads to less waste because food is protected from rapid deterioration.

Self-service selling started with manufactured foods and other household products but has now been extended to other items including fresh foods, hardware, clothes and many other goods. The main reason is the same – to reduce selling costs.

This large-scale swing to self-service retailing has meant changes to packaging in bulk, designed to provide for the high throughput of supermarkets and hypermarkets. Since delivery of many products is made on pallets, cage pallets have been developed to carry goods in bulk, without the use of corrugated cases. Retail chains can display the products in these cages and sell directly from them, reducing handling costs appreciably; when a cage is empty it is removed and replaced by a full one.

The obvious difficulty – how to price-mark individual packs – may be resolved by the introduction of 'article numbering', a bar code which can be printed on packs and read by a scanner at the check-out. This development, still in its infancy, is likely to have far-reaching effects on the packaging industry and on retail trading.

There are two main reasons for the development of convenience in packaging. First, there is the feeling that since packaging costs money it ought to be designed to give the maximum value for that money. Secondly, and this is the important point, many people, especially working wives, require and can afford foods and other products packed to provide convenience. Boil-in-the-bag foods, and foods packed ready for heating in the oven are examples.

Paradoxically, the other side of the same coin is the convenience called for by increased leisure; this again creates a market for convenience foods, and for cans and bottles people can drink from. Probably the most convenient pack yet invented is the aerosol. It is not cheap, but its sales are now almost two and a half times greater than in 1968, a rate of increase, in packaging, exceeded only by plastics.

The future growth of the industry cannot be forecast with confidence. Total growth is not expected to be much higher than the growth in manufacturing industry generally, because most things which could reasonably be packed are now packed, and totally new markets are harder to find. A number of trends seem likely, such as in the continued growth of newly developed materials and pack types, especially where the newcomer offers advantages in cost, in light weight, bulk and use of labour. Examples are the growth of plastic sacks and the decline of jute sacks, and the growth of heavy-duty fibreboard packs as replacements for wood.

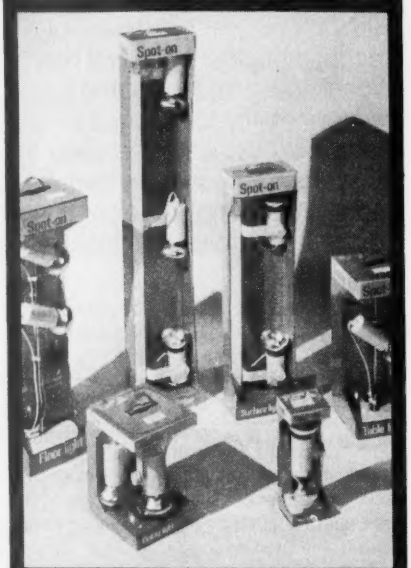
Continued growth of convenience packs can be expected, as a result of technical developments stimulated by consumer demand. An example is the clumsily named 'ovenable board' – cardboard which can be used to contain food while it is cooked in an oven. Development work on flexible containers will continue, for example the retort pouch. When successful, this could have a very large market, to the detriment of some rigid packs such as cans.

Without a doubt, there will be continued efforts to reduce, or at least contain, packaging costs. This will take several forms, including further light-weighting – though this may be limited from now on because the process is inherently asymptotic – use of new materials, increased recycling of waste and improvements in production efficiency.

Future growth will depend on several imponderables. For example, a change in milk packing from returnable glass bottles to non-returnable board or plastic packs has been predicted for years: this like the reports of Mark Twain's death, has been 'greatly exaggerated', yet it may happen some day and cause a major upheaval. Major changes in material prices may also alter markedly the present pattern of the packaging industry.

Starpack stars

Two of the winners in the Institute of Packaging's 1978 Starpacks competition. Top Supreme award winner, one of Smart and Brown's packs for light fittings; bottom Quaker Oats' polyethylene/aluminium foil laminate.



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The next five years

Packaging plays a vital part in product distribution and is the major factor in ensuring that the quality that is obtained at the end of the production line finishes up in the hands of the ultimate customer. This look into the future for packaging by Frank Paine, director of the packaging division at Pira (the research association for the paper and board, printing and packaging industries) starts from the premise that packaging be regarded as a benefit to be optimised rather than merely a cost to be minimised.

Packaging, in product distribution, is a techno-economic function aimed at maximising sales (and repeat sales and so profits), while minimising the total overall cost of distribution. It can be regarded, therefore, as a benefit to be optimised rather than merely a cost to be minimised. Packaging must be considered in relation to four major factors in industry today: materials utilisation; machinery and line efficiency; movement in distribution; and management and men.

Figures 1 and 2 show the principal materials used in UK packaging in both quantity and value over the last few years. Figures 3 and 4 give an indication of the situation in West Germany over a similar period and Figures 5 and 6 the corresponding situation for Japan. These show that for all materials, except plastics, in the European countries, there is little change over the last four or five years in quantity of material used, although the value of that material has increased considerably.

These figures underline one of the major development trends in the use of all packaging materials: the development of better structures and better systems so that less material is used to do exactly the same job – protecting products and ensuring their safe delivery to their users.

The ability to run packaging materials on a packaging line efficiently is very much related to the smooth operation of all the mechanisms involved. The packaging material must feed properly into the forming section of the machine. It must then enclose the product adequately and seal it efficiently. It must then be collated and placed into its transport container and finally into a unit load or into a freight container for despatch without the production of large quantities of waste. Jam-ups on packaging lines and lack of control not only produce waste packaging material but at best they require the product which has been inefficiently packed to be packed again, and at worst, they may have damaged products to such a degree that they can no longer be sold.

Quality assurance on production and packaging lines is therefore vital and the next five to 10 years will undoubtedly see better control systems produced for packaging lines. This has already started in the field of automatic weighing with the use of mini-computers and the use of microprocessor-controlled systems will be the subject of much development in the next five years.

Once packed the product may be stored in a warehouse but ultimately the package leaves the factory for the outside world to meet the mechanical hazards of transport and the climatic difficulties of storage before it reaches a supermarket, an engineering workshop, a factory or a shop somewhere in the world on the way to its ultimate user. The study of the movement of goods and the hazards which exist is, therefore, a very important part of the R&D scene in packaging.

Much of the earlier work carried out at Pira was concerned with this aspect and to develop tests which either reproduced the hazards of transport, or the effects of those hazards on the pack or the product, enabling an evaluation of packages for particular systems of distribution to be made. This work also included the examination of specific products for the protection they need against the mechanical and climatic hazards largely to answer one of three basic questions.

- ☐ How can this package (which does not behave satisfactorily in protecting its contents) be improved without a corresponding increase in expenditure?
- ☐ How can a package (which is performing very satisfactorily) be reduced in cost without reducing its performance characteristics?
- ☐ How can this new product (which we have never packed before for this market) be packaged economically?

The answers to these questions are of considerable significance to every producer of goods and to the nation as a whole as far as export is concerned. The correct application of the techniques developed could result in the reduction of more than 20 per cent of the loss and damage currently sustained during transit of all types of retail (and many capital) goods made and used in the UK. Five per cent of the nation's packaging bill, currently running at £3,000 million a year, might well be saved if the appropriate test procedures were routinely set up by all product manufacturers alternatively, each production unit could establish a packaging audit on a regular basis, say, once every 18 months, to make sure that its packaging practices were currently in line with modern concepts.

Consequently, research and development in the next five years will undoubtedly look at the requirements for new methods of handling, new types of package, as well as techniques of unitisation. A re-appraisal of the fundamental hazards in transport and of the test methods by which they are reproduced in the laboratory must be made and research over the next three to four years will concentrate to some extent on this area.

Pira has already completed one project which examined the vibration hazards and produced a new £25,000 equipment in the form of a vibration table for studying the effects of the vibration hazards from all types of transport on packages and packaged products.

Pira now proposes to study and analyse and measure the other mechanical hazards of distribution, transit and warehousing. It will assess how those hazards affect unit loads and quantify the hazards to individual packages by placing recording instruments inside them to measure and record the impacts and pressures to which packages are subjected in transit.

At the same time, the project will assess the effects of climatic hazards on packages and packaged products. While this main study will deal with the general run of goods, the position of dangerous and hazardous chemicals will be studied specifically, particularly in view of the United Nations' recommendations and the international regulations for the carriage of hazardous goods by road, rail and sea. Pira has already suggested various test methods for intermediate bulk containers and other types of package used for hazardous chemicals and plays a leading role internationally through an International As-

Will it stand hard knocks? Pira belts a beer can.

Packaging for Europe

The Hotel Norwich, Norwich, 7 to 9 March. This conference will study the implications for UK industry and commercial life in the strengthening of Britain's ties with Europe. Current, draft and future legislation will be covered, with emphasis on the affect on all aspects of processing and packaging distribution anf retailing.

Further information is available from the Institute of Packaging, Fountain House, 1A Elm Park, Stanmore, Middlesex HA7 4BZ, tel. 01-954 6277.

Packaging: the facts and figures

Both nationally and internationally packaging is a major industry. The figures show how manufacturers have contained rising materials costs by developing better structures and systems to protect products and ensure their safe delivery to the end user.

Key to graphs
Figure 1, UK trends in volume of packaging material used; figure 2, UK trends in the value of packaging material; figure 3, West German trends in the value of packaging material; figure 4, West German trends in volume of materials; figure 5, value trends in Japan; figure 6, volume trends in Japan.

Estimated UK manufacturers' production/sales of selected packaging materials by value

£ million

Material	1972	1973	1974	1975	1976	1977
Paper wrapping	30.6	37.1	48.4	69.5	84.7	87.3
Paper sacks	42.5	52.2	79.0	77.6	96.4	105.3
Paper bags and carrier bags	28.0	33.5	46.7	50.8	56.1	64.5
Fibreboard cases	5.9	5.4	6.3	5.8	5.1	4.3
Folding cartons	166.4	204.1	294.1	307.6	367.2	423.1
Rigid paperboard boxes	145.4	175.7	234.8	253.7	304.5	381.1
Regenerated cellulose film[3]	31.9	35.6	45.2	48.0	56.3	67.5
All plastics materials[1]	38.0	46.0	68.0	63.0	81.0	89.0
Glass containers	145.0	210.0	276.0	300.0	448.0	448.0
Metal closures	107.4	123.3	137.5	175.0	220.6	267.0
Metal cans and containers primarily of tinplate	n.a.	38.4	56.8	47.9	60.5	72.2
Aerosols	206.0	240.0	310.0	335.0	500.0	546.0
Steel drums	12.5	20.0	26.5	26.5	28.5	34.0
Aluminium foil	38.5	45.3	58.5	59.5	81.4	104.9
Metal collapsible tubes[4]	40.0	47.8	64.7	55.0	62.0	80.0
Wooden containers	n.a.	6.7	9.5	10.7	14.2	16.2
Jute sacks	60.4	86.1	120.8	106.8	115.7	151.3
Laminates[2]	7.7	8.2	8.9	8.9	8.8	8.9
	50.0	71.2	74.1	86.8	121.1	158.3

Source: Pira Statistical Reviews.
[1] Converted value. [2] Figures produced by Department of Industry in 1972 are not judged to be entirely accurate. [3] Unconverted. [4] Aluminium collapsible tubes only. n.a. Not available.

Estimated UK manufacturers' production/sales of packaging materials, by volume

Material	Unit	1972	1973	1974	1975	1976	1977
Paper[2] for packing and wrapping	000 tonnes	195.0	204.5	199.8	162.4	160.6	142.0
Paper bags[1]	000 tonnes	137.0	137.0	120.0	98.0	101.0	101.0
Paper sacks	000 tonnes	269.0	285.0	300.0	205.0	244.0	225.0
Fibreboard cases	mill.sq.metres	2 415.0	2 651.2	2 652.4	2 118.0	2 297.9	2 429.8
Carton board for folding cartons	000 tonnes	542.0	627.0	670.0	502.0	547.0	580.0
Rigid paperboard boxes	000 tonnes	74.0	77.5	76.0	64.1	65.7	63.9
Regenerated[2] cellulose film	000 tonnes	79.3	87.0	86.6	63.5	81.3	76.6
All plastics materials	000 tonnes	455.0	566.0	589.0	500.0	612.0	641.0
Glass containers	mill. units	6 501.0	7 148.0	6 459.0	6 200.0	6 546.0	6 548.0
Closures	bill. units	17.1	18.2	16.3	15.5	15.4	15.0
Tinplate for container manufacture	000 tonnes	849.4	941.0	938.0	807.0	904.0	899.0
Aerosols	mill. units	360.5	437.5	477.5	441.5	495.0	532.5
Steel drums new and reconditioned	mill. units	42.0	44.2	43.5	36.0	38.3	39.6
Aluminium foil	000 tonnes	34.1	38.7	42.4	32.5	37.9	38.7
Metal collapsible tubes	mill. units	506.0	554.0	620.0	556.0	560.0	584.0
Jute sacks	mill. units	86.8	83.0	74.5	67.8	65.8	58.4
Laminates[4]	000 tonnes	—	68.4	85.3	84.7	103.9	117.2

Source: Pira Statistical Reviews.
[1] These figures are considered rather as 'guestimates' and include carrier bags. [2] Total sales figures. These are not synonymous with home sales by virtue of the large export element. [3] This is an estimated UK production figure. [4] Figures produced by Department of Industry before 1976 are judged to be inaccurate.

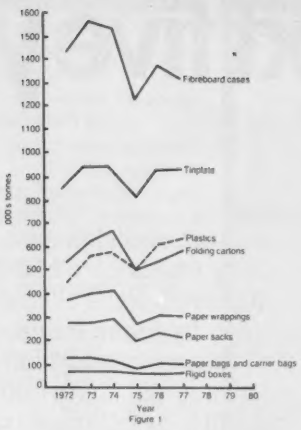

Figure 1

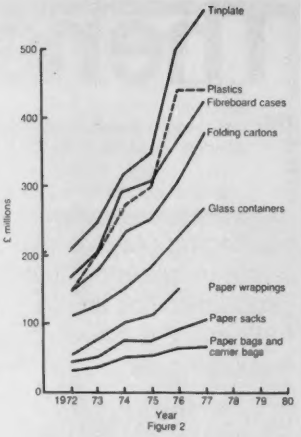

Figure 2

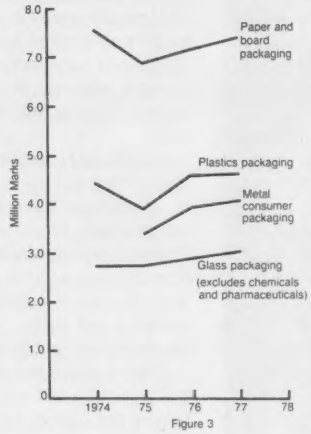

Figure 3

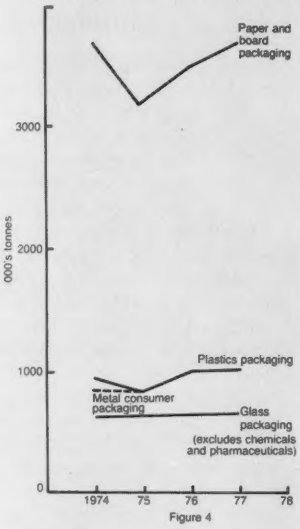

Figure 4

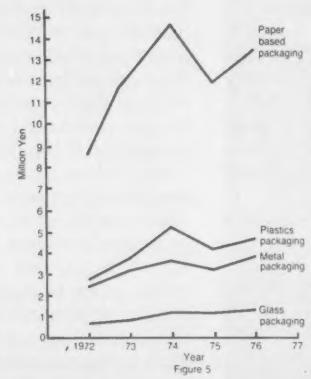

Figure 5

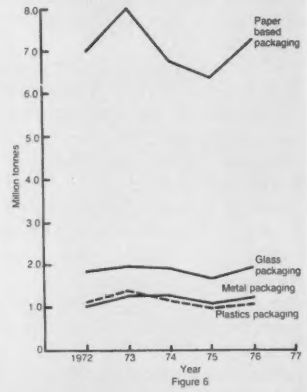

Figure 6

sociation of Packaging Research Institutes' working party.

Materials, machinery and movement are three vital aspects of the packaging complex. All of them are welded together by an appreciation in the management area of the importance of packaging in ensuring quality to the customer. All the care and skill exercised in making a particular product can be entirely wasted if the packaging is incorrect in some way – if it fails to protect the product en route – if it fails to sell the product in the market place – and if it costs too much to produce.

Management should ensure that the design brief for any product incorporates a requirement to design the packaging as well and provide a statement of the markets in which the product is to be sold. The designer of the equipment, particularly if it is a mechanically or electrically actuated machine, can then assess how much strength he needs to build into the product to withstand the hazards of transport and how much he should rely on the packaging to ensure safe delivery.

Very frequently a more expensive, better-designed product can lead to lower cost packaging which, overall, will sell the better product at a lower cost to the ultimate user. Management techniques in the field of packaging control will also be the subject of much development during the next five years and mini-computer techniques utilising microprocessors may have a role to play in this area also.

Will it travel well? Pira shakes it all about.

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Unwrapping the packaging sector

Many industries comprise the packaging sector. In their diversity they range from long established industries such as timber packaging and cartons to bright new industries such as expanded polystyrene. Each has its special qualities and characteristics of packing material to offer the product manufacturer. In this section of *Trade and Industry*'s special report contributors from the industries portray the individual types of packaging. They present past and present progress, the manufacture and use of their industry's products and new developments.

Aluminium for canned drinks

from Metal Box Ltd

Aluminium was first used in the manufacture of UK beverage cans in 1967-68, when the tinplate top of a soft drink can was replaced by an easy open end. In 1968 the top was opened by a flat tab, which was followed by the present ring-pull version. Beer cans followed shortly afterwards and the use of the end contributed to the enormous growth in volume of canned beverages.

The next stage was production of beer can bodies in aluminium manufactured by the draw and wall iron process, and Metal Box produced the first cans of this type in the 16 oz size at its Glasgow factory in 1974 on two production lines. Two-piece, soft-drink cans in 12 oz size made from aluminium followed soon afterwards, made by Nacanco at its Skelmersdale factory in Lancashire, where 16 oz beer cans are now also in production. Metal Box is currently planning to commission a further two aluminium lines at Braunstone near Leicester during 1979.

Production of beverage cans in the UK is in the region of 3000 million cans per annum and of these it is estimated that just under 20 per cent are made from aluminium. The rest are made from tinplate, in either the conventional three-piece style or drawn and wall ironed in the two-piece version. Total use of aluminium for beverage cans in 1978 was about 18 000 tons for ends and 8000 tons for bodies.

Drawn and well ironed beer can.

Unlike tinplate cans, aluminium cans are only manufactured in the two-piece form, and the future development of the beverage can market is seen as being entirely in two-piece cans. Choice of tinplate or aluminium is a question of economics, supply arrangements, and developing the correct technology to reduce the thickness and weight of metal employed. All-aluminium beverage cans are claimed to be easier to recycle and, while there is some truth in this statement, it ignores the fact that tinplate cans with aluminium ends are already being recycled on an industrial scale in the UK.

In the processed foods sector, the use of aluminium containers continues to be restricted by the unfavourable price comparison between aluminium and tinplate. Some success is being achieved in the fish canning sector where, particularly in Europe, this packaging medium has been preferred for some time. The material is particularly suited to the manufacture of shallow-drawn irregularly shaped containers, such as ovals, or rectangles. Such containers are often closed with aluminium easy-open ends, adding to the presentation of such products as kipper snacks and smoked mackerel fillets. The re-expansion of the British fish canning industry, leading to the substitution of home-produced products for a variety of imports, but particularly Japanese mackerel, is likely to lead to a steady growth in the use of aluminium in this sector, although because of price its application is likely to be primarily for up-market, high added-value products.

Aluminium was the material first used for aerosol containers when the system was conceived around 1930. Although the introduction of the tinplate beer can in the United States provided an opportunity to apply the technique of high-speed production to aerosols, aluminium still maintained a very important part of the market, particularly on the mainland of Europe. The UK industry, however, was keen to adopt the high manufacturing speeds available with tinplate and coupled with the comparative costs. Aluminium cans have only been used for a very small percentage of the aerosol market. In 1978 aluminium containers accounted for approximately 30 million units which presented just over 5 per cent of total fillings.

Aluminium does provide some special advantages. They are primarily the absence of a side seam giving the facility for all round decoration, scratch brushing of the body giving special print effects and the ability to produce sizes and even shapes which are not available from tinplate. The price of aluminium in the UK, however, is likely to inhibit growth, and if future fillings maintain the pattern of the last few years, the aluminium sector will probably show a modest decline.

Aluminium foil

by John Lane, information officer of the British Aluminium Foil Rollers Association

Aluminium foil holds an important share of the UK market for packaging materials. It has specialised properties for both protection and presentation that are particularly valuable in the food, tobacco and pharmaceutical industries where the bulk of foil packaging is used.

In percentage terms, aluminium foil takes about 3 per cent to 4 per cent in value of the overall market for all kinds of packaging materials. In those particular sectors where aluminium foil's properties are most appreciated the percentage used is, of course, very much higher.

Aluminium foil is defined as thin sheets or rolls of aluminium in thickness from 0.2 mm down to 0.005 mm. Its properties recommend it for many packaging applications and its range of usefulness is appreciably extended by laminating the foil to other materials such as paper or plastics. A significant percentage of aluminium foil is now used as part of composite laminate materials, and, where the barrier properties of the foil rather than the decorative ones are being exploited, it is often hidden from sight between other substances.

Take away in aluminium foil.

The main attributes of aluminium foil for packaging are its light, moisture, gas and odour barrier properties, its hygienic and non-toxic nature, its dead-fold and easy-forming characteristics and its good visual and decorative appeal. The combination of excellent product-protection properties coupled with visual acceptability and a consumer image of good quality has resulted in wide-spread use of aluminium foil for the packaging of products ranging from aspirin tablets to whisky cartons, and from butter wrappers to cigarette packets.

Other properties of aluminium foil help the material to find applications in a diverse range of engineering uses from fins for heat-exchangers to sheathing for electric cables and from honeycomb structures to printing plates.

Foil can withstand both high and low temperatures without any adverse effect on its properties and as a result is not only widely used for disposable containers in the bakery trade, but also for products to be deep-frozen. The boom in the home deep-freeze market has brought with it a boom in the sale of foil containers. The easy formability of aluminium makes it an ideal material for cold-pressing into containers in sizes ranging from 25 mm diameter up to 400 mm by 300 mm. The larger sizes have been gaining acceptance in institutional catering over the past few years and continued growth is expected with the further development of centralised cook-freeze kitchen units serving schools, hospitals and other institutions.

The use of foil as a wrapping material (kitchen foil) has also increased along with the deep-freeze boom. Containers and kitchen foil make use of foil as a packaging material without the lamination to it of any other substance. Laminated materials are now available that have complex combinations of, for example, paper/polythethylene/aluminium foil/polythethylene. Combinations of this sort provide advantages not available with the use of any of the constituents on its own. The example mentioned is used for a wide range of products, providing not only good barrier properties to gases, light and moisture, but also high-tear strength and a heat-sealing facility, that enables the material to be made, for instance, into pouches or fully encapsulating tablet packs.

Growth in the flexible packaging sector will come from products such as the 'composite container'. Originally conceived as the poor man's 'tin can', the composite can now has

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Wrapping butter in aluminium foil.

its own features, including unique closure styles, high-quality outer labelling and visual appeal, that are enabling it to establish a market of its own. These include applications where decorative appeal as well as protection are important, for instance, outer cartons for drinks' bottles, and cosmetics packs. More applications, for products such as milk powder, potato powder, peanuts and fresh ground coffee, will follow as techniques for gas-packing (to exclude oxygen) are further developed and accepted. Such packs have been in use in the United States for some six years.

Another high-growth area is for pet foods. The British Aluminium Foil Rollers Association (Bafra) award in the Institute of Packaging's annual star pack competition went, in November 1978, to a dog food pack comprising cellulose film (reverse printed)/aluminium foil/ polyethylene. The pack provides ideal protection for a moist food and shows significant savings on packaging raw materials, and distribution costs, compared with a tin-can.

Demand for aluminium foil is mainly satisfied by UK production but approximately 20 per cent of total consumption is met by imported foil. Importers established a market share some years ago at a time when there was insufficient domestic capacity. However, in the past five years member companies of Bafra have spent approximately £22 million on modernisation and expansion. This new plant is now all on stream and, with ample capacity now available, the UK industry is geared to regain its markets and to satisfy expansion demands. Despite a relatively static overall consumption pattern in the UK, the industry is confident that its modernisation plus more than £1 million spent annually on research and development will pay dividends in the future.

Cartons and boxes

by Dick Addison, president of the British Carton Association

The UK carton industry is a significant part of the total UK packaging market. The UK carton market is worth £401 million in a total UK packaging market worth £3,000 million.

The UK market is supplied by 200 companies, and so is a fairly fragmented industry. However, within these 200 companies there are some 21 companies, in turn belonging to 13 international or national groups, that account for 60 per cent of sales, some £240 million sales value. The industry employs approximately 30 000 people, 40 per cent of employees being women.

Over the last few years the UK carton industry has competed with many other forms of packaging and materials, and in recent years has competed against increasing overheads and carton competitors. There has been erosion of traditional markets but because of an increase in the rate of technological input to the skill and craft based carton making operation, there has been growth into new markets. The overall effect over the last few years has been to consolidate rather than to show significant growth.

Because of the overall competitive climate, companies have developed expertise in competing in particular segments of the market. For example, the accurate die cutting expertise of companies supplying the cigarette industry or the high machinability cartons developed by companies for the frozen food industry.

Traditional skills are employed throughout the manufacturing cycle. The first part, in almost all instances, is the printing. Skilled, accurate and detailed printing is a feature of cartons against many other packaging forms. Printing may be done by letterpress, lithographic or photogravure processes or a combination of any two or all processes. Recent developments in this area have been the introduction of infra red and ultra violet drying for inks and varnishes which can give improved throughput and reduce possible ink odours, a particular requirement of the food and confectionery industry.

The carton industry has undertaken a significant investment programme over the last few years, and is a capital intensive industry. There has been installation, over the last few years, of high-speed printing presses and, for high volume production, reel fed, in-line photogravure machines. These machines have been particularly successful in supplying part of the requirement of the detergent and carton industry.

Printing gives the carton its visual advantage over many other packaging forms, but it is the cutting and creasing of the carton that gives dimensional accuracy for efficiency in running a modern production packaging line. The accurate cutting and creasing of individual cartons from a multiprinted sheet forms the basis of the carton maker's skills. The final process for carton manufacturing/printing, determines its specific use. This may be simple one-seam gluing to form tooth paste cartons, to the multigluing operating to form complex designed confectionery cartons. Cartons, in combination with other packaging materials, can extend the use of either form. Such combinations are used to supply barrier, sift-proof packaging for the instant coffee industry.

While some 40 per cent of board consumed by the industry is imported, 60 per cent of all board consumed is home produced. The tendency over the last few years has been an increase in the consumption of imported board, mainly from Scandinavia, Finland and north America. However, significant developments of synthetic board and synthetic fibre substituted board are taking place.

One significant development, using a combination of both with other packaging material, has been the development of ovenable boards. Paperboard laminated to polyester gives the carton the ability to withstand cooking temperatures. But more importantly the carton may be heated in a microwave oven, a property present heatable containers do not have. So with the growth in the market for microwave ovens predicted over the next few years, a significant growth in these cartons is predicted.

As a companion industry the box industry consists of many small, and a large, companies, most specialising in providing rigid boxes for a particular trade or industry, such as cosmetics, hosiery, tools, light-engineering products, cutlery and all forms of gift packaging.

It is a labour intensive industry, unlike the carton and printing industries, still using out-workers, and mostly female labour, as the construction of many modern packs is intricate and essentially light work.

Companies in the mass production field are well equipped with modern, sophisticated, high-speed machinery, but many of the smaller firms are still using older machinery and much hand labour, thus enabling more versatility and shorter runs at economic prices. Materials are varied as many products require special qualities in the boards and papers used, most of these being home produced and recyclable.

Cartons in wide variety.

Paper sacks

by Jack Hubbard, chairman of the Paper Sack Development Association

Paper sacks have been a major component of the industrial packaging and distribution chain for over 50 years. In the UK, the largest European market of paper sacks, over 1000 million a year are manufactured. They are used to pack and deliver many hundreds of different commodities including cement, chemicals, china clay, coal, fertilisers, fishmeal, flour, mail order goods, potatoes, sugar and other materials and products.

The rapidly accelerating advances made in production and materials handling techniques and methods during the last 20 years have been reflected in equally impressive developments in paper sack technology. Improvements in the manufacture of kraft paper have been matched by new, improved methods of sack manufacture – all geared to the demands of customer product and handling requirements.

Those requirements have dictated the two types of sack now generally used-open mouth, which are closed after filling, and valve which are closed automatically as part of the filling process. All paper sacks are basically flexible containers made from one to six walls, or plies, of papers with protective coatings to meet the requirements of users. The papers used are carefully selected according to the product to be packed and often incorporate film, foils, special coatings, laminations, impregnations, surface treatments according to the degree and type of protection required. The degree of overall protection which

Unit loads of paper sacks.

can be afforded by paper sacks can be gauged from the following specifications for which they have been designed:

☐ protecting contents from absorption of atmospheric vapour or loss of moisture
☐ preventing the escape of essential oils or flavour or preventing outside contamination
☐ preventing insect infestation of products
☐ protecting chemical actions between contents and other materials
☐ preventing seepage and penetration of products packed in a molten state with facilities for removal of the paper after opening
☐ providing gas or vapour barriers for volatile products
☐ resisting abrasion and scuffing from sharp objects both in and outside the sack
☐ preventing sifting of fine grained products
☐ giving protection against bacterial contamination or foreign bodies
☐ assuring easy, complete emptying
☐ providing outer surfaces with non-slip properties for safer storage and handling
☐ providing an excellent outer surface for graphics.

The wide variety of constructions, closures and sizes available from sack manufacturers are the result of long evaluation of the equally varied needs of the industry's customers. This has also resulted in the development of weighing, closing and filling equipment designed to maximise the benefits of paper sack packaging within the current requirements of manufacturers. The choice of this type of equipment must initially be dictated by the type of sack used.

This, in turn must take into consideration such factors as the nature of the product, whether it is to be packed from bulk storage or directly from batch or continuous process plant, onward handling, compatibility of product where several lines may be handled, warehousing and distribution.

When filled, paper sacks can be readily transported by either chute or conveyor to warehouse or direct for despatch. Their inherent strength of construction minimises their liability to damage by crushing or tearing. In the warehouse, if the product is to be free-stacked the inbuilt non-slip properties of paper and the ability of the filled sack to take different shapes offer both better stacking and better use of space – properties which benefit users whether loads are palletised for storage or direct distribution.

The options open to paper sack users who need to palletise loads range from simple aids to reduce fatigue where low throughput dictates the manual build-up of pallets to fully automatic palletising machines designed to cope with high volume production. Load stabilisation is also if required by the nature of the product. This ranges from simple banding devices through to full stretch or shrinkwrapping to provide complete load protection.

For onward transport by road, rail or container the underlying benefits offered by paper-sack packaging systems continue to offer distinct and realisable economic incentives in terms of protection and better use of space. This, and the ability of the pack to withstand extreme climatic conditions and handling by either manual or mechanical handling methods has led to its increasing adoption as an export pack for materials ranging from low-value chemicals to high-value foodstuffs.

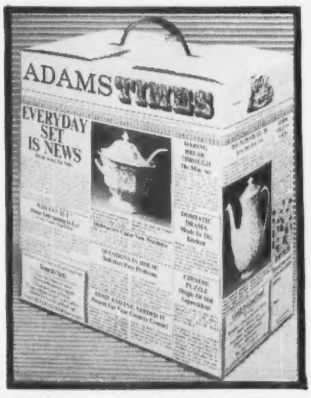
The paper sack industry sees further developments in terms of more automation and improvement of weighing, closing and filling systems as more of its customers mechanise their own manufacturing processes. There may also be further developments in the retail markets where economic, consumer-oriented packs for pet-food and do-it-yourself products have already had a impact.

Fibreboard cases

by Ray Sholem, secretary of the Fibreboard Packing Case Manufacturers Association

Fibreboard cases are the outer packaging used to enable the vast majority of consumer and industrial products to be transported from the manufacturer to the user.

Key factors in the dominant position of fibreboard cases are relative cheapness, the fact that they are one-trip packages with no problems attaching to returnable packages and the fact that they are recyclable. In addition considerable flexibility is offered to the customer in terms of size of order, quality of board, size of case and variation in styles and colours of print. This flexibility has given rise to an industry consisting of all sizes of company from the very small to the very large multi-plant company. Thus, the customer has a considerable choice of supplier and is aware of the competitive nature of the business.



Screen printed carry-case.

In recent years there has been a growing use of heavy grades of board for heavy-duty applications such as packaging machinery and large containers for transporting loose fill material, such as chemicals in bulk.

Also recently introduced have been automatic packaging machinery lines in customers' premises. The customer is supplied with fibreboard blanks which are formed into cases and filled on the customers premises. Such systems can only be used where the goods to be packed are in large volume. This method of packaging has given rise to 'packaging systems' as a term in common use where the whole system is considered in one exercise rather than piecemeal.

The fortunes of the industry tend to follow fairly closely the manufacturing activity of the country. The current size of the industry shown by figures issued by the Fibreboard Packing Case Manufacturers Association – the association to which most manufacturers belong – indicate that in 1978 the tonnage of paper and board converted into cases was approximately 1.5 million tonnes with a turnover approaching £450 million. The industry includes the manufacture of a wide range of board grades from very heavy triple wall to very fine E-flute in corrugated and various solid boards including water-resistant polyethylene-coated board. A considerable amount of money has been invested in new methods and equipment in advance of the upturn in trade which all industry hopes will occur in the not too distant future.

Flexibility is particularly important when we consider that supplies are necessary for, say, a food manufacturer using his own transport to deliver to supermarkets with very little handling involved or alternatively, a whisky distiller who exports a valuable commodity all over the world involving very severe handling risks in some areas. The differences in types of board and design of cases for such different uses has to be catered for.

Flexibles

From the Flexible Packaging Association

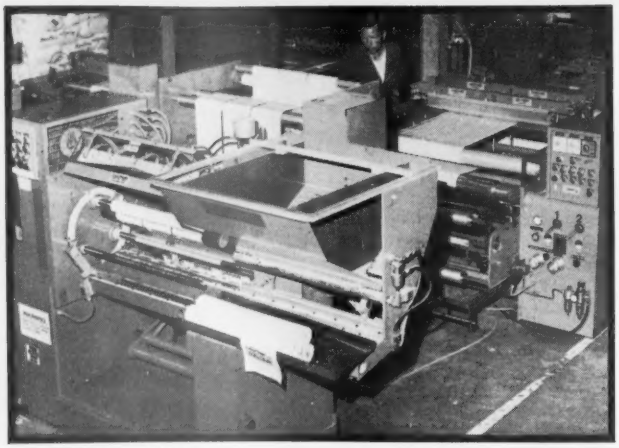
The 'flexibles' industry of the UK packaging sector is highly competitive and well placed and equipped to meet all the UK market requirements. Its operating environment is one of great variety in terms of technologies, end-uses and products. The industry incorporates all forms of packaging other than rigid containers such as corrugated boxes, cartons, and metal and glass receptacles. Over the past 15 to 20 years the market has grown significantly, primarily because of a real increase in the requirements for packaging products and the substitution of other forms of packaging by flexible packaging.

The largest user of flexible packaging products is the food industry. Approximately 60 per cent of the industry's sales are to this sector, with the remaining sales spread among the tobacco, horticultural, pharmaceutical, engineering and building industries. Raw materials used are paper, plastics film, cellulose film and aluminium foil: the materials are often combined. 'Laminates' is the term used when materials with differing characteristics can be combined in layers to achieve various barrier and sealing performances. Materials can be used in their natural state or coated with a protective or sealing material. Packaging material may be printed, mainly by flexographic and rotogravure processes.

The bulk of the sectors sales, 60 to 70 per cent, consists of single-ply, printed material. Development in the distribution of consumer goods, particularly non-durable products, through self-service supermarkets have changed the packaging industry by imposing increasingly rigid constraints for packaging techniques, aesthetics and prices. In response to these seemingly contradictory constraints the industry has, over the past decade, developed more sophisticated and technically complex product lines.

An important aspect of the development of new products is that although the technical development (particularly in base materials, their combining and printing) has been significant, the investment in new plant has not been fundamental to this development. In fact some of the most technically complex flexible packaging products produced in Britain can be manufactured on well-established printing and converting machines.

The increasing use of plastics film is, perhaps, the most striking development in this sector in recent times. Bread wrapping is an example. Five years ago wrapped bread usually appeared in waxed paper; today, 70 per cent of wrapped bread in the UK is in flexo-printed, polyethylene bags, with only 17 per cent in waxed paper. This trend is expected to continue, but, of course, more slowly than previously.



Bag making machine.

The advantages offered by film in terms of flexibility and cost savings make it an attractive packaging medium. The rate of technological change in the plastics industry is very rapid and should at least, keep plastics film prices competitive with those of paper. Developments in co-extruded film, for example, offer enormous potential for producing a material, with better properties than those that exist now, but at a reduced cost in material input terms.

With the increasing complexity of the packaging medium that offers sophisticated barrier and presentation properties, the machinery on the packaging lines in the customer's factory needs closer technical support to make the best use of the filling lines potential. The UK flexibles industry is well placed to meet this service need and to assist the product manufacturer to reduce the impact of rising costs.

As the material content per unit package decreases and the complexity of the product increases the potential for exports and the vulnerability to imports become more real. Currently imports from Europe are having a significant effect on the UK flexible packaging market. This is occurring at a time when, as already indicated, demand in the UK is exceeded substantially by the production capacity of the UK manufacturers.

Opportunities for the flexible packaging industry are substantial. From an environmental and ecological viewpoint, flexible packaging, with its low material content, displays many advantages over alternative packaging methods. Developments such as the work being carried out on a retortable pouch indicate this form of flexible packaging will offer a real and in many cases a more economical alternative to the traditional metal cans.

Glass containers

by Oliver Normandale, director of the Glass Manufacturers Federation

The glass industry has every reason to be confident. Among the many points in its favour are new plant investment, a national promotion campaign, new container types, advanced technology, and environmental awareness and conscience. The glass industry can look forward to increasing success as its promotional campaign begins to change the public's attitude towards glass as a packaging material. In the face of competition from other forms of packaging, the glass container manufacturers have not been slow to point out the main benefits of glass industry which are characterised by quality, hygiene, relatively cheap and indigenous raw materials, recyclability, and resealability.

The promotional activity of the glass industry, run by the Glass Manufacturers Federation (GMF) promotions bureau, has resulted in a new awareness among the public of the glass container. Even more important, it has demonstrated to bottlers and retailers that glass can compete and win sales in a modern packaging world. One British glass manufacturer has consistently demonstrated the competitiveness of glass by becoming the largest manufacturer of pharmaceutical containers, exporting to over 100 countries.

The number of glass containers sold in the UK in 1978 reached some 7000 million – around 2 per cent up on the 1977 figure. This low growth rate can be explained by two main factors. First, in 1977 UK consumer expenditure fell by 1 per cent while glass container sales increased by over 3 per cent. This rise in glass container demand was largely in anticipation of a rise in UK retail sales that year. This rise did not materialise until late 1977 and consequently resulted in a substantial destocking in 1978 to compensate. A second factor contributing to low demand was the poor summer of 1978, though the impact of this will be offset, in part, by the year's much improved economic climate.

Destocking in some markets has, however, been offset by substantial growth in others. The demand for no-deposit bottles in beer and carbonated minerals has increased considerably. It is in the take-home beer market that the one trip container has begun to emerge with favourable results. The widemouth bottle has already had an impact and gives a base to the optimism of glass manufacturers. Research carried out by GMF indicated that people favoured glass for hygiene and quality reasons, but found the ring pull can more convenient. Careful design of the widemouth bottle with a rip-top or screw-top closure has enabled glass to compete as a convenience pack, while still maintaining the qualities associated with glass.

In 1976 Ruddles began experimenting with widemouth bottling, convinced that quality beer needed quality packaging. The company's confidence in the new glass pack was soon demonstrated when it decided to bottle its total production of beer in the widemouth bottle. Ruddles brews and bottles own-label bitter for Sainsbury and Waitrose and consequently the widemouth has also made a major breakthrough in these supermarket chains. Whitbread, one of Britain's major brewers, was the first to launch beer nationally in the widemouth bottle and since then many other major brewers and drinks firms, including Bass Charrington, Courage and Bulmer's Cider have been suitably impressed to test market their products in widemouth in various parts of Britain.

Not only is the glass industry heavily investing in its promotional campaign, but it has a commendable record of huge investments in new plant and machinery. Over the past 10 years over £75 million has been invested in new equipment, paving the way to increased productivity.

The benefits of glass packaging can hardly be mentioned without reference to the glass industry's recycling scheme. Glass containers are so closely associated with quality that this attribute had paradoxically almost become its downfall. While it is known from research that people prefer to buy many products packed in glass containers, it is also known that housewives find it difficult to put these well-produced and beautifully made objects into the dustbin. Even though glass containers are a cheap form of packaging the housewife's conscience was pricked by the thought of such wastefulness.

In the same way, even though Britain is lucky enough to have substantial indigenous sources for the main ingredients of glass – silica sand, soda ash and limestone – the manufacturers of glass containers were in no way prepared to stand by and ignore these problems of wastage. Awareness and a sense of social responsibility on such problems as litter and energy savings led GMF to set up a glass recyling system. In 1977 the launch of the first 'bottle bank' took place in Oxford and in just over a year 30 towns have now adopted the scheme, collecting more than seven million bottles and jars.

Wide mouth pull top glass bottle.

Bottle banks are large skips situated in convenient sites where people can take along their empty bottles. All they have to do is to deposit them in the correct colour coded holes for brown, green and white glass. The bottle banks are operated by GMF in conjunction with local authorities who sell the collected waste glass (cullet) back to glass manufacturers for recycling. Obviously this recycling scheme achieves its main aim of greatly alleviating the problem of litter, but an added bonus in the scheme is that the use of cullet in glass furnaces helps to reduce the level of energy required to keep them burning. The public has made such an encouraging response to bottle banks that GMF plans to extend the scheme throughout Britain during 1979-80.

Plastics

by David Robson, assistant editor of Packaging News

There is no doubt that the plastics sector of the packaging industry has burgeoned rapidly in the last five years, thanks to the versatility of the material. This adaptability is constantly being stretched by technical innovation, research and development which makes plastics suited to more and more applications. Technical and creative minds have found a meeting place in plastics, so not only have the functional elements of packaging been enhanced, but the horizons of marketing personnel have broadened considerably.

However, it is a sober fact that prices and the supply structure of raw materials for the plastics packaging industry are at present weathering stormy seas, inevitably resulting in higher prices for plastic feedstocks. The chemical used in the production of ethylene, the 'building block' of most plastics resins, is naphtha, and this is derived from oil though ethylene can also be produced from various gases found in the North Sea. And oil is bound to become shorter in supply and so more expensive.

One of the most spectacular developments currently underway in plastics packaging is the emergence of polyester bottles for carbonated beverages. At first sight there seems little out of the ordinary about this container, but there is no doubt that it is revolutionising the carbonated soft drinks market in the UK, and will directly enable a far larger volume of

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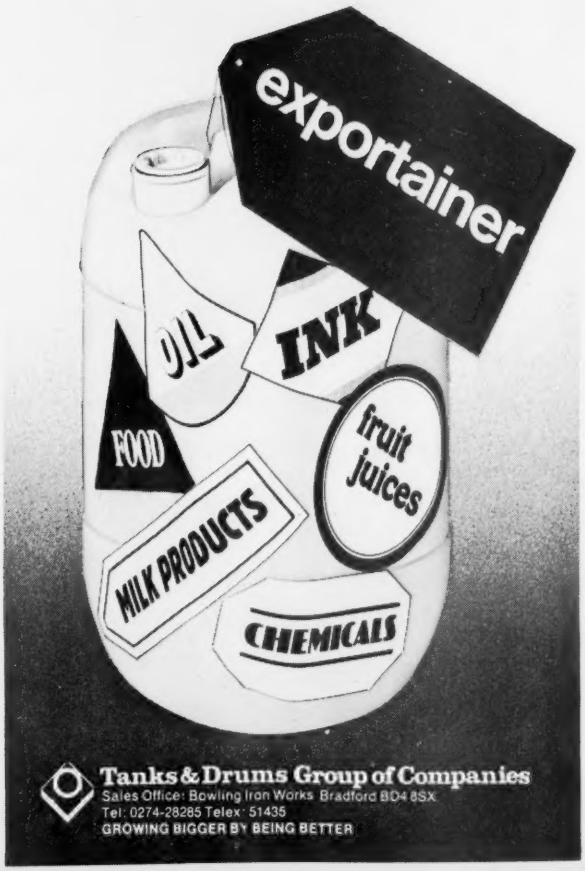

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In large sizes, that is 1½ litres and upwards, polyester bottles are proving more attractive to consumers and sales outlets, particularly supermarkets, than large bottles or multiple packs of cans. They are lighter than their traditional counterparts, and when correctly manufactured polyester is nearly as clear as glass, enabling the product to be easily seen. Furthermore, polyester bottles are almost unbreakable even when full. They can be labelled in the conventional manner, and bottlers currently using glass containers need make only minor modifications to their filling lines. The contents are ensured a long shelf life and, in the large sizes, polyester bottles can be cost-competitive with other container materials.

Polyvinyl-chloride bottles still hold a strong market position in the UK, with many customers in the cooking oils and fruit squashes sectors. Polyethylene bottles remain strongly favoured for items that do not rely on visual appearance for sales appeal, such as washing-up liquid.

Many chemicals are distributed and exported in polyethylene containers, such as jerrycans or drums. The material is particularly tough and survives long journeys well. However, some chemicals attack this material, and it can also be adversly affected by hot or cold extremes of temperature. When despatching particularly aggressive chemicals, especially if they may have to travel to very hot or cold parts of the world, and maybe stand exposed on docks for long periods, a more specialised material may be required. To meet this need, the first firm in the UK to make jerrycans in capacities of from 1 litre to 5 litres in high density high molecular-weight polyethylene has now commenced production, and is catering to this requirement.

The plastics bag has also undergone much development, and though usually thought of as a straightforward item, can be quite sophisticated in some of its mutations. The conventional polyethylene bag is basically simple and can be used for a multitude of purposes. But there is also a polyethylene bag with a special closure strip at the top, enabling it to be opened and closed many times. These can be filled on automatic machines, and are taking off rapidly in fields as diverse as hardwear and hosiery.

A company wishing to present garments in this type of pack might benefit from using polypropylene bags. These have more clarity and are generally agreed to give more sparkle to the product. Polypropylene bags with a closure strip at the top can be purchased, enabling the contents to be inspected and the bag reclosed without damage.

When a small item is to be merchandised, plastics skin or blister packing on a backing card is becoming prevalent. A small tube of glue, a pair of scissors or a soldering iron, for example, can be presented to good effect. The backing card can be punched at the top to facilitate hanging display.

Shrink-wrapped products.

Shrink-wrapping and stretch-wrapping are closely related to the techniques mentioned previously but are more often used when collating groups of packs together for distribution. For example, several dozen cartoned tubes of toothpaste can be shrink-wrapped together for despatch to a supermarket. The relative merits of shrink-wrapping and stretch-wrapping, as well as skin and blister packaging, are under debate at the moment, and there seems to be no definitive answer. The choice depends very much on the specific products to be packed, the importance of good display, specific costings and physical properties required.

Shrink and stretch wrappings can also be used to secure pallet loads. Another way of securing pallet loads is with polypropylene strapping, which is by now developed into a sophisticated art. Polypropylene can be strong enough to secure pallet loads of bricks, for example. Several automatic polypropylene strapping machines are now installed and operating under difficult conditions onboard trawlers.

Plastics appear in many guises in packaging, besides the ones mentioned so far. These include expanded polystyrene 'loose fill' material, in which small chips or shapes of EPS are poured around a product within a carton to provide cushioning for transit, and there are systems for producing foam 'in a box' around the product.

Clearly, plastics have an ever increasing role to play in packaging, with new developments constantly underway. Growth is dynamic and prospects for the user are stimulating. For the manufacturer, especially for those hoping to export, competition is intense, and expertise, service, quality and cost-competitiveness all have to be of the highest order if British companies are to compete successfully.

Expanded polystyrene

by Reg Aston, director of The EPS Association

A relative latecomer to the packaging scene, expanded polystyrene (EPS) has made substantial inroads in many fields because the material possesses so many advantages, both physical and economic. EPS Association statistics reveal that use of the raw material by member package moulders, measured by weight, has increased by an estimated 19 per cent during the two years 1976 to 1978. While expansion throughout the entire EPS package moulding industry may not be quite as high, this figure realistically illustrates the potential.

The technology of expanded polystyrene, developed since 1951, is comparatively simple. The raw materials, polystyrene beads in which a volatile hydrocarbon is incorporated, softens and expands when heated. Mouldings are made by placing partially expanded beads in an enclosed alloy mould into which steam is injected. The beads expand further, filling the space and fusing together. Fully expanded, the material forms a coherent cellular mass with a density of about one-fortieth of solid polystyrene. Moulding is carried out mainly on automatic machines.

While EPS gained favour for packaging delicate equipment such as optical and electronic instruments because of the excellent protection it offers against shock and its very light weight. More and more manufacturers are now discovering the value of its many other properties, which include high thermal insulation, low water absorption and chemical inertness. They are finding it proves economical, especially in terms of reduced damage to goods in transit, reduced labour on the packaging line, and integral sales promotion potential.

EPS containers have been used to export fresh meat to troops in the Middle East, because of its excellent thermal insulation and moisture resistance. Fish is distributed more and more in EPS fish boxes for the same reasons. Other uses in the field of food and drink include a coloured base moulded to locate a dozen tubs of an 'instant' snack before shrink-wrapping. These coloured bases, which match the tubs, have a sales slogan moulded along their visible front edge, providing immediate point-of-sale display.

A wine-bottle pack has been used to send individual bottles safely by post, and one enterprising wine exporter used a large cylindrical moulding, shaped and coloured to look like a huge cork, to hold sets of three wine bottles for sale as a gift pack in a New York store.

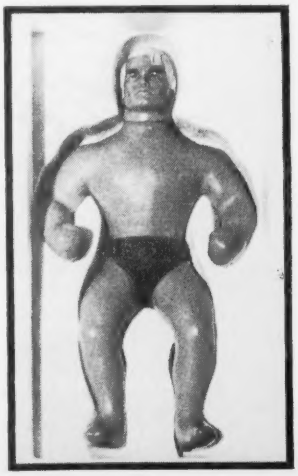
The UK drug industry has, in recent years, had to face new restrictions in several European countries that make the cost of international transit of many pharmaceutical preparations prohibitive in the form in which they are normally sold. To reduce costs, these drugs are exported in concentrated form and converted into consumer preparations in the importing countries. These concentrates are often contained in relatively fragile glass vessels which require reliable packaging. The problem which this presented has been solved with specially designed EPS packs. In these packs the glass containers will survive a drop of up to 1.8 m and a direct load of 2000 kg. As EPS is so light these packs do not add much to freight costs and have the added advantage of protecting their contents from excessive heat and frost.

British Leyland pioneered the use of moulded EPS containers for the safe inter-company transport of its Gold Leaf automobile engines, ranging from the 850 cc Mini power unit to that fitted in the 1.3 litre Marina. This system is known to have achieved substantial savings when it replaced the wooden crates previously used. Another multinational motor manufacturer imports car engines from Brazil for use in European assembly plants, and found that the moulded EPS containers not only reduced packaging labour costs, but solved the problem of rusting on the sea journey, because the two piece moisture-resistant containers are easily sealed with adhesive tape.

Another multinational industry which has achieved considerable economies by using EPS packaging for inter-plant transportation is television manufacturing. This industry moves tv tubes in bulk from production to assembly over hundreds and sometimes thousands of miles, and the ensuing problem was solved by development of a pallet system embodying a moulded monobloc which not only accepts and protects tuves in quantity for transit but allows automatic packing and unpacking. A locking system ensures that these pallets can be stacked without slipping and their design is such that they can be used over and over again.

A recent development in expanded polystyrene technology is a new colôuring process where moudlings can be made in almost any colour. This makes EPS more suitable than ever before as a point-of-sale aid and is already being used in manufacturing presentation packs in the cosmetic industry; it is also expected to be used widely in the toy, glassware and other consumer industries. EPS can also be printed on, painted and given a hard or flocked coating.

An unusual EPS pack.



Timber and plywood

by Ronald Davis, past-president of the Timber Packaging and Pallet Confederation

Timber was probably one of the first materials used to form containers. In the nineteenth century developing industrialists recognised timber's unique properties and adopted it on a major scale for the carriage of their manufactured wares and foodstuffs. While it would be true to say that it has suffered, over the past decade or so, a diminution in demand, it might also be true to predict that this has now 'bottomed-out', and its properties are likely to ensure its place in the future. Statistics show that, excluding the building industry, timber packaging is the largest industry consuming softwood timber.

'Containerisation' in shipping undoubtedly has had an impact in reducing the amount of timber packaging required, but excessive zeal shown by some container protagonists in earlier days, promoting the idea that goods would only need the lightest packaging, has often been followed with regrets. Disappointment and inconvenience of the overseas customer cannot be measured merely in the cost of repairing or replacing goods.

Usually packaging can be economised where full container loads are travelling 'door-to-door'. However where less-than-complete-loads are concerned the degree of rehandling can be considerable, with the attendant hazards, as shipments are broken down for onward transit within the destination country, while many parts of the world still lack container handling facilities.

Containerisation may have reduced demand on one branch of our industry, but it has increased the demand on the branch concerned with the manufacture of pallets, although often carried on within the same firm. Although we are now touching partially on the subject of materials handling (in the warehousing aspect), this is often so closely bound up with packaging, in the movement of goods, that it is difficult to separate the two.

Palletisation, for the moment ignoring container traffic, has made an enormous contribution in the economic movement of goods within the UK, and has contributed much to the decline in the demand for a timber or plywood case, although many would argue that it is, for our industry, merely a change in design to accommodate changing conditions. Technical standards for pallets, particularly in relation to the performance requirements, have been given considerable attention in the past three years, culminating in the new British standard 2629 pt. III. While they unquestionably represent a 'best buy', on a value-for-money basis, nevertheless the old adage that you can't expect more than you pay for applies as forcibly to pallet specification and pricing as to any other manufactured product.

Heavy-duty corrugated fibreboard cases have also cut into the lighter end of the timber packing-case market but their tare weight reduction capability can easily be matched by the plywood case, and we must not forget to include the large part which plywood cases now play in the total 'wooden' container market.

Recently a textile machinery manufacturer did a test drop of a timber case from 5 ft., dropping it onto a corner. The case containing a knitting machine weighing over a ton was somewhat distorted, but it did not burst and the contents were undamaged. The packers experienced difficulty in prising open the case to examine the contents, due to the annular-grooved nails used in the case's construction. It has long been contended that the part of a case most likely to fail first is the nail joint. Modern designed nails make a big contribution to the strength of timber cases.

Technical studies in timber and plywood case design have been proceeding apace over the years. For over 30 years the only British standard available has remained unchanged and little used largely because it's specifications were considered excessive and uneconomical for commercial purposes. However, close co-operation between the Timber Research and Development Association (Trada) and the Timber Container Confederation (Timcon) has resulted in substantial revision which should provide a much more practical hand book for specifiers of timber packaging, in the form of British standard 1133, section 8 which is due to be published this year. Trada has been doing a lot of laboratory work for the Ministry of Defence, over the past few years on the most economical design of plywood cases. The research, now completed, should not only lead to revision of the ministry specifications but should also have a useful commercial spin-off.

Tinplate

by John Wilson, director of the Metal Packaging Manufacturers' Association

Though under pressure from other materials, tinplate continues to maintain, and in some important sectors improve, its commanding position in the UK packaging market. The value of UK tinplate container sales was estimated for 1978 at around £585 million – exceeding its nearest rival by some £100 million.

In recent years all three sectors, processed foods and beverage cans (open-top), fancy boxes, lever lid tins and alike (general line) and aerosol have shown growth. However, within each sector a few product areas have remained static or suffered a slight decline in volume either due to the general economic situation or poor weather conditions. But the long-term confidence in the future of tinplate is illustrated by the substantial investment programmes currently being undertaken by the British Steel Corporation as the major supplier, the leading can makers and container manufacturers and their customers, fillers, packers and processors.

Spurred on by economic and to a lesser extent environmental pressures all this new investment has a common purpose, to reduce raw material usage and to produce a more secure yet economic container.

A reduction in raw material usage has been achieved by the introduction of double reduced plate. BSC has invested a significant amount in updating its cold-reduction mills at its three tinplate plants and the installation of a new double reducing mill at Ebbw Vale. Double reduced plate gives thinner gauges of tinplate which enables can makers to produce a container with less material while retaining the necessary strength characteristics. On the larger size food cans beading is being introduced to resist the possibility of panelling. The search for cost savings will also lead to an increase in the use of reduced tin coatings.

However the most important development in the industry was the introduction by leading can makers of two-piece technology for the production of beer and beverage cans and more recently for processed food containers.

The introduction, a few years ago, of the drawn and wall ironed (two-piece) process with its potential ultimately to use less material and the improvements in the integrity of a can without a side seam, showed the direction that the industry would take in the late 1970s and 1980s. During last year all the major can manufacturers announced their intention to increase substantially their investment in two-piece beverage can technology including one new entrant, Continental Can Co (UK) Ltd.

For over a decade, and particularly since the introduction of the aluminium ring-pull end, cans have become the accepted take-home container for beer and soft drinks with the 12 oz size being the preferred container for soft drinks and the 10 oz and increasingly more popular the 16 oz for beer.

In the current economic climate long term forecasting is difficult, but the Brewers Society statistics show a continued growth for beer in cans at a rate of 10 per cent per year up to the end of the forecasting period in 1983. At the larger end of the market party can sales for beer which up until now have remained static are also on the increase due to the introduction of the dome-end. This new end makes it possible to can those beers which require higher pressures such as lager.

In addition to the introduction of two-piece technology and double reduced plate to the food can market other possible developments including the import substitutes with English tomatoes and sweet corn and the canning for the first time of cauliflower. Also it is expected that the current move towards packing fish in the UK will gain momentum over the next five years leading to a reduction in imports particularly of canned mackerel and pilchards. The gradual introduction of cans with a white internal lacquer is also expected for this gives the can an improved internal appearance.

In the general line sector, three developments are particularly significant, the move towards welded side seams in preference to soldered, the increasing combination of plastic closures and components with tinplate bodies such as the paint can with a plastic handle and the development of new decorative textures and aesthetically pleasing shapes designed primarily for the cosmetic and toiletry markets.

The introduction of the welded side seam not only improves decoration by enabling all round print but perhaps more importantly because the welded seam is inherently stronger than soldered, the container can be necked in to fit plastic closures. As a result a variety of new plastic closures are currently being tested by food manufacturers as a possible successor to the lever lid. Other examples of this marriage of materials which gives the advantage of a tinplate base, strength and high quality decoration with the convenience of plastic components, are numerous tamper evident spouts now available for tinplate oblong containers for liquids.

The export of nostalgic decorated fancy boxes particularly to Holland, France and the United States continues unabated. The UK lead in this market is based upon our superior origination and printing skills which other countries have not retained.

Sales of aerosol containers continue to increase in the cologne, perfumes and household product sectors. A significant export trade to mainland Europe of empty containers is well up in recent years and this trend is expected to continue. However, if the EEC decided to restrict the use of chlorofluorocarbon because of the ozone controversy then this estimate would have to be revised.

A positive approach to the question of tinplate recovery is also being made by the industry. Material Recovery Ltd a partnership between Metal Box Ltd, the UK's leading canner, BSC and Bachelor Robinson Ltd, the leading detinner has installed a ferrous metal (mainly tin cans) extractor plant at the Tyne and Wear County Council's refuse transfer station at Benwell. The company recently announced that it is to set up a further extractor plant at Stoke-on-Trent.

Packing it in

Getting the right amount of the right product in the right pack is the function of the packaging machine. The manufacturer wants a piece of equipment that will last and perform to a high standard with the minimum of maintenance. Mr H. R. Barker, chairman of the British Packaging Machinery Manufacturers' Association – a division of the Process Plant Association – describes the products and the producers.

The function of a packaging machine is to combine measured quantities of product with packaging materials or preformed packs in order to produce complete packages. The machine and the operations it performs have to be compatible with both products and packaging materials. As a rough and ready guide, a packaging machine may handle its own value in product every week, and consume a like amount of packaging material in a month.

It will be expected to perform to high standards of accuracy and efficiency for anything from five to 20 years with a minimum of maintenance, few repairs and perhaps a rebuild to up-date or modify its function – usually to accommodate a new size, style or material of pack. Thus a packaging machine is an occasional item of capital expenditure which should be designed with care to meet not only the immediate needs of the customer but as far as possible to be economically adaptable to foreseeable changes in product and/or pack.

At the heart of any packaging operation is the primary pack, containing a measured quantity of product in a form convenient to the consumer. A simple packaging machine may do no more than help an operator to fill and close a preformed pack. However, most packaging operations are more complex than this, involving a series of operations performed by unit machines or, most probably, by an interconnected line of specialised machines.

In a typical line the pack may be erected, counted, cleaned, inspected and weighed. The product, measured automatically by weight, volume or number is inserted, and the pack closed and sealed. It may then be inspected by check-weighing or inspection of fill height, any under- or over-filled packs being rejected. If the pack is not already preprinted, a label will be applied, while information such as batch numbers or prices may be added by coders or overprinters. Finally, batches of individual primary packs may be collated into secondary packs for storage or transit, an operation which may be repeated to give tertiary packs as unit loads.

The number and complexity of the operations involved in the production of any one type of pack leads to a wide variety of machines which differ in function, size and operating speed. In a line all have to be linked and synchronised. More recent developments have meant that measurements taken when filling or checking packs can be used to produce records, print prices, and keep the packed quantity within closely defined limits. Signals which assist quality control of any production line can also be made available.

In almost every country where packaging machinery is made nearly all the production is undertaken by small or medium-sized firms, each specialising in a few types of machine and probably aiming at a limited number of markets. Even where the industry is dominated by a handful of large companies. These tend to keep to a fairly narrow range of machines, and even then not every item in the line. Taking the UK as a whole, there are perhaps 200 companies with an interest in packaging machinery or ancillary equipment, less than half of these would regard packaging machinery as the mainstay of their production. Most will have turnovers between £250,000 and £2.5 million, and will employ between 25 and 100 people.

Between them they produce machinery valued at £120 million of which about 45 per cent is exported. They include private and independent limited companies, together with subsidiaries of national and international groups, mainly concerned with engineering.

The fragmented nature of the industry, with its wide range of machines capable of being combined into a variety of packaging lines has a strong effect on marketing techniques. Sometimes the supplier of the key machine or most machines in a line will assume the role of main contractor; that position may be taken by the customer, using his own engineers to install individually purchased machines; in others the task is given to the supplier of equipment producing goods to be packed. There are a number of informal consortia, some combining for an individual line, others on a semi-permanent basis. There have been a few amalgamations, and some manufacturers offer multi-function or monobloc machines, but a line of individual machines is still the norm.

Specialisation in a fairly small market means that exports are the key to survival for most packaging machinery manufacturers, and this sometimes puts a considerable strain on the sales staffs of smaller firms.

A lot of use is made of the joint venture scheme of the British Overseas Trade Board at overseas exhibitions, usually under the sponsorship of the Institute of Packaging, and with machinery always well represented.

The machinery markets

Between 1970 and 1976 exports from OECD countries grew by almost 20 per cent per annum from $604 million to $1,597 million. Although West Germany and the United States lead the field, the relationship to home production is very different. Germany exports around 80 per cent of its output, while in the United States more than 80 per cent of output goes to satisfying the home market. The UK steers a middle course, with exports around 45 per cent, while imports total just over 50 per cent of home consumption – a situation the industry is seeking to remedy by development and in close co-operation with home users.

Percentage share of imports from OECD

Country	1970	1973	1976
Canada	6.0	5.9	6.1
France	10.4	10.5	11.3
Italy	4.1	5.0	2.9
Netherlands	5.6	5.0	4.8
UK	5.3	6.5	5.1
USA	4.5	4.1	4.8
West Germany	6.8	6.3	5.4

Source: OECD.

Percentage share of OECD exports

Country	1970	1973	1976
France	4.0	5.0	4.9
Italy	12.0	11.5	11.3
Sweden	4.4	4.5	4.5
Switzerland	5.4	5.7	6.3
UK	7.5	4.7	4.7
USA	20.2	16.3	16.3
West Germany	36.2	40.5	39.1

Source: OECD.

The performance of the British packaging machinery industry 1974-77

Current prices

	1974 £m	1975 £m	Change	1976[1] £m	Change	1977 £m	Change
Sales by UK manufacturers	62	71	+15	79	+27	98	+58
Exports from UK	25	34	+36	40	+60	48	+92
Import to UK	41	40	−4	42	+2	55	+34
UK market (Home sales + imports − exports)	78	77	−1	81	+4	101	+29
Exports as per cent of home sales	40	48	+20	51	+28	49	+23
Imports as per cent of UK market	53	52	−2	52	−2	55	+44
Trade deficit	15	14	−7	11	−27	7	−53

Sources: Department of Trade, HM Customs and Excise.

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A concern of law makers

Packaging is concerned with the sale of goods. When the nature of goods is at fault, packaging may be involved. Packaging may be such as to deceive the purchaser about the nature of the goods inside, or the quality or quantity. That purchasers should not be deceived about the sale of goods has been the concern of law makers for a long time. William I, at his coronation in 1066, confirmed that 'they shall have throughout the whole kingdom measures most trustworthy and duly certified'. Some of the present legislation affecting packaging has a very long history.

Although there is no separate branch of law which may be conveniently classified as the 'law on packaging', many statutes do affect the packaging industry. Legislation on the sale of goods, trade descriptions, transport, weights and measures, food and drugs, to name but a few, all concern a packer.

Until the mid-nineteenth century a purchaser was, in the main, able freely to examine goods. He could sniff, prod and taste at will. Today, the sale of goods is a more sophisticated exercise. Goods, for the most part, have disappeared from direct view. They are now likely to be contained in opaque, attractive wrapping which is generally designed for ease of handling and to ensure that goods remain fresh and in good condition when they reach the purchaser.

Information, some of which is required by statute, will be printed on the wrapping. And just as retailing has become more complex, so the range of legislation regulating it has also been extended.

This article concentrates on a few topics of current interest to the packaging industry. One of the most important of these is the new Weights and Measures Bill, published on 15 November 1978. This proposes a new system of control, from January 1980, over the weight and volume of most pre-packaged goods. Under the new system, sometimes called the 'average' system, legal responsibility for the contents of these packages will largely switch from the retailer to the manufacturer. Enforcement will take place at the packaging stage of the production line, resulting in more extensive and effective control over the contents of packages in the interests of the consumer.

Most countries in the world now operate on some form of average contents system and the change-over in the UK from our present minimum system will remove a competitive disadvantage under which our industry has been operating in export markets. The bill will enable control to be extended to some products, particularly those subject to weight variation through moisture loss which are at present exempt. Examples are wines, tobacco and knitting and rug yarns. The advent of the average system will also make it easier for the government to extend standardisation of quantities over a wider field.

Indeed, it has long been recognised in the UK, that the best and least expensive method of helping consumers to compare the price of items which can be readily prepacked in pre-determined quantities is to prescribe a range of quantities in simple arithmetic sequence in which those items may only be made up for retail sale. It has for many years been a requirement under the Weights and Measures Act 1963 to sell a wide range of grocery items such as sugar, tea, coffee and flour, in a range of prescribed quantities. Since 1974 the government have added biscuits and chocolate bars to the list.

Another means of assisting comparisons is the practice of packaging in a standardised container size, particularly for those goods where technical problems make it difficult to fill the container with pre-determined standard quantities. This is already being done on a voluntary basis by the manufacturers of powder detergents, but the government has powers to enforce this by order. These developments towards greater standardisation have wide implications for the packaging industry at a time when new materials and more flexible packaging are being developed.

In the case of items, such as fresh meat or cheese, which cannot invariably be packaged in standard quantities, or are frequently sold loose, unit pricing (ie marking the price per pound or per kilogram) helps price comparison, leaving consumers to make their decisions on grounds of competing qualities. Powers in the Prices Act 1974, as amended by the Price Commission Act 1977, have been used to require unit pricing for important fresh and frozen foods. Consultations are now taking place to extend unit pricing to poultry, and to cover certain pre-packed fish. In the case of such random weight packing, the label giving weight, unit price and selling price is normally an important part of the packaging operation, and there is an increasing demand for suitable packaging and labelling equipment.

The origins of some of the legislation mentioned above lie in our membership of the European Economic Community. The packaging industry has taken a close interest in developments in the community. One subject of particular interest has been the discussion of a possible directive proposing mandatory beverage container deposits and discouraging non-returnable containers by fiscal and other measures. The packaging and containers working group of the Waste Management Advisory Council is current engaged on a study of beverage container systems in the UK. The government will carefully consider the results of the working group's study in formulating its approach to the commission's initiative in this complicated field.

There are further examples of important packaging legislation originating in the community. One such is the frame-work directive concerned with materials and articles coming into contact with food. Specific directives will follow, covering food packed in ceramics, plastics, glass and paper and other materials. Another is that directive on aerosols which provides that, where an aerosol complies with specified structural safety tests and standards, it may carry the reversed epsilon symbol to denote its compliance. Additional UK regulations designed to lay down similar safety standards for aerosols not carrying the reversed epsilon will be introduced shortly.

A further example is the directive on the

Under proposed legislation control of contents will be enforced at the packing stage.

packaging and labelling of dangerous substances, implemented in the UK by 'The Packaging and Labelling of Dangerous Substances Regulations 1978'. These regulations require, among other things, that no prescribed dangerous substance may be supplied to anyone unless it is in a container which is designed, constructed and secured so as to prevent the contents escaping under normal handling conditions. They also require the container to be capable of withstanding any adverse effects of the contents.

In the UK, the principle of voluntary self-regulation of packaging has been adopted. Last year, the Packaging Council, representing the interests of the industry, consumers and environmentalists, was formed to administer a code for the packaging of consumer goods. The code states that the prime function of packaging is to enable consumers to receive products in good condition at the lowest reasonable price. Marketing and commercial considerations should be reconciled as far as possible with economy in the use of materials and energy.

The council will investigate complaints from consumers if they feel there has been no satisfaction from the retailer, the manufacturer or the relevant trade association. The concept of a self-disciplinary code of practice is not a familiar one in the community and the packaging code may well influence the commission's attitude to packaging questions in the future.

Packaging and the environment

by Michael Mitchell, secretary general of the Industry Committee for Packaging and the Environment (Incpen)

A free modern society cannot manage without packaging. It is regrettable that it has taken a lorry drivers strike to establish as a fact something that has been so hotly debated throughout the 1970s. The simple truth, however, is that it is virtually impossible to feed the modern world without centres of production and systems of distribution. Packaging is an essential element in enabling food and other goods to be moved safely and hygienically from the place of production to their final destination in a palatable or useable condition.

Opponents of packaging point to the world's finite raw materials and energy resources and say that packaging is using them up. They point to rural and urban sites and say that they are being spoiled by litter 'caused by packaging'. Packaging is wasteful, they say, because you have to throw it away – why can't it all just be recycled?

The main raw materials used in packaging are paper, metal, glass, plastics and very small amounts of other materials. It is not for Incpen to explain each of these categories; the trade associations are doing that amply elsewhere in this survey. Nevertheless, we can make some general comments about the overall picture of raw materials and also say a little about each sector.

The main general comment is that packaging represents a very small part of the overall consumption of the world's raw materials. The trouble is that packaging is such an everyday – and visible – part of our lives that, because we see so much of it so often, it is easy to form the impression that it consumes a high proportion of materials available.

Paper and board are mainly made from a plentiful and replaceable resource – timber. In addition, about one-half of the paper and board in the UK is made from recycled fibre, and one-third of all useage is recycled.

Metal in packaging is mainly either aluminium or tinplate. The aluminium industry says that its chief source of raw material – bauxite – is in sufficiently good sup-

A code for packaging

'The prime function of packaging is to enable consumers to receive products in good condition at the lowest reasonable price.'

Criticism levelled in recent years at some instances of the packaging of consumer goods has led, in the UK, to the formulation of a code for the packaging of consumer goods. It was devised by representative organisations of consumers, manufacturers of materials, packers and distributors of consumer goods, and those concerned with the environment. The code sets out agreed general guidelines as a basis for good packaging practice, taking due account of social, economic, legal and environmental factors.

The code states that the prime function of packaging is to enable consumers to receive products in good condition at the lowest reasonable price. Any manufacturer, distributor or retailer concerned with design or use of packaging has a responsibility to ensure that there is a regular review of packaging having regard to the economics of the total manufacturing/distribution chain and to considerations of re-use, and disposal. Marketing and commercial considerations should be reconciled as far as possible with economy in the use of materials and energy, and the environment.

- ☐ Packing must comply with all legal requirements
- ☐ In containing a product the package must be designed to use materials as economically as practicable while at the same time having due regard to protection, preservation and the presentation of the product
- ☐ Packaging must adequately protect the contents under the normal foreseeable conditions of distribution and retailing and also in the home
- ☐ The package must be made of materials which have no adverse effects on contents
- ☐ The package must not contain any unnecessary void volume, nor mislead as to the amount, character or nature of the product it contains
- ☐ The package should be convenient for the consumer to handle and use. Opening (and reclosure where required) should either be obvious or indicated and convenient and appropriate for the particular product and its use
- ☐ All relevant information about the produce should be presented concisely and clearly on the package
- ☐ The package should be designed with due regard to its possible effect on the environment, its ultimate disposal, and to possible recycling and re-use.

The Packaging Council was set up in October 1978 to supervise the operation of the code and to amend and develop the guidelines in the light of experience. The council meets under an independent chairman, Lord Shepherd, and the members, who serve in a personal capacity, are drawn from the different interests concerned with packaging.

The establishment of the code and the council is essentially a system of voluntary self-regulation, both accepted and funded by the packaging industry through the industry committee for packaging and the environment (Incpen). One of the major tasks of the council is to see that all comments and complaints on packaging get proper consideration and that each one receives prompt and responsible treatment. A main objective is to build confidence and understanding between industry and consumers.

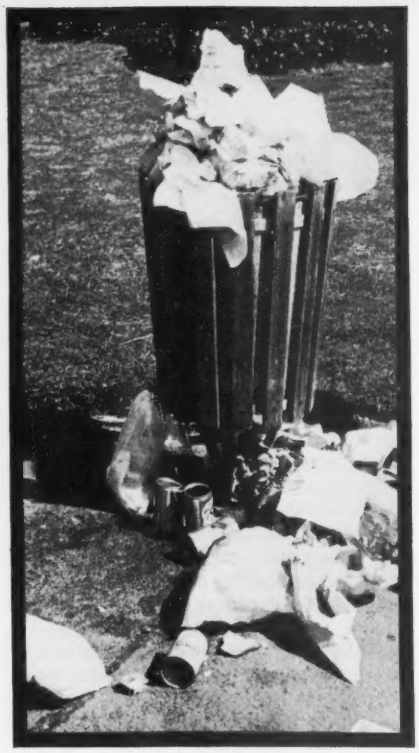
Further information is available from the Packaging Council, 40 Brook Street. London W1Y 2EP, tel. 01-629 0753.

ply to enable all foreseeable needs to be met without threat to the future. Energy used in the material's manufacture has been halved. Nevertheless, efforts to recycle aluminium have been stepped-up, for it takes only 5 per cent of the energy used in the raw material's processing to smelt recycled aluminium.

The scale of steel used in the production of tinplate for the manufacture of tin boxes and cans is put in perspective if one asks the question, 'how many cans does it take to make a super tanker?' Again, however, recycling is possible. At present, it is not feasible to make tin cans from waste cans but some 200 000 tonnes of ferrous scrap are extracted from domestic waste and used for making cast iron. This figure will increase as more local authorities follow industry's lead and set up recycling plants.

In the UK, the raw materials for glass – sand, and soda ash mainly – are inexpensive and readily available. Just the same, the glass industry has created a nationwide bottle bank scheme which enables members of the public to return glass containers so that they can be remelted into new products.

Plastics are much misunderstood, chiefly due to the pressure of discarded plastics packages in household refuse and litter. Plastics have many properties that make them suitable for many packaging applications – so the public see a lot of plastics packages and form an exaggerated impression of their use. In practice, less than 4 per cent of the contents of an average dustbin is plastics. It is perfectly possible for recycled mixed polymers to be used for lower grade purposes – eg shoe heels. The main raw materials for plastics are coal and oil. The National Coal Board does not seem to think that coal supplies in the future are in jeopardy and only about 2 per cent of total oil products is used in the manufacture of *all* plastics – of which packaging uses less than a third.



Litter: Incpen probes problem.

Packaging is often said to be a large user of energy but, as the accompanying figures show, this is not the case in the overall scale.

UK packaging industry energy usage

Area of use	Actual value million tons oil equivalent	% of total national usage
Raw materials [1]	5.8	3.2 [1]
Conversion	1.2	0.6
Total	7.0	3.8

[1] Includes melting in the case of glass.

Litter is an emotional subject. This is mainly because hardly anything is known about it. So far as it is known, the local authorities have conducted no research; nor has central government. The Glass Manufacturers Federation conducted a bank holiday survey of

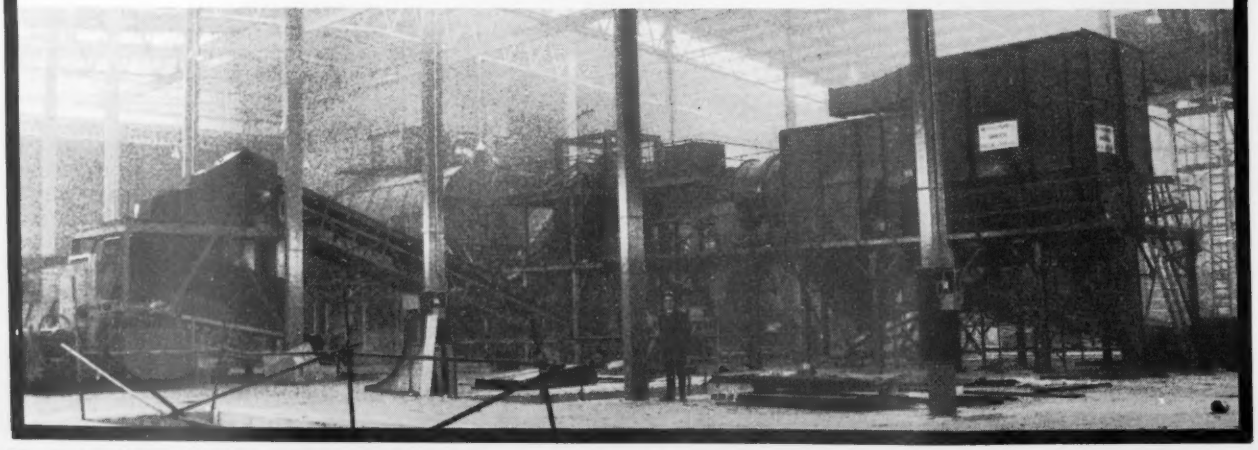
Scraping the bottom of the dustbin

Ultimately, most packaging ends up in the dustbin. Of the 20 million or so tons of commercial and domestic refuse discarded each year in the UK, it is estimated that about 10 per cent by weight consists of ferrous metal (largely tin cans), 10 per cent glass bottles, 25 per cent paper and card (much of which is in the form of cartons and other packages) and 3 per cent plastics (for example, as plastic bags). At present, most of this material is disposed of by controlled landfill according to a code of practice laid down by the Department of the Environment, or by incineration in large municipal incinerators. Both these methods have drawbacks, however, in the form of environmental penalties, loss of materials to the economy and, in the case of incineration, high cost.

At the Department of Industry's Warren Spring Laboratory, the possibility of reducing the amount of refuse to be disposed of is being investigated. Paper, glass, ferrous and non-ferrous metals are separated from the refuse in a pilot-plant which exploits low-cost physical processing techniques such as sizing, magnetic separation and air classification. The object is to produce re-usable materials in forms which can be used by the process industries: samples produced in the Warren Spring pilot plant have been distributed widely for assessment and valuation by potential user-industries. Their response has been sufficiently encouraging for the Department of the Environment to contribute to the cost of a large-scale plant now being built by South Yorkshire County Council in Doncaster. Experience obtained with this plant should show whether it is economically viable to separate materials from refuse and return them to the industrial sector for re-use.

During the design of the Doncaster plant, engineers from Warren Spring Laboratory have collaborated closely with officers from South Yorkshire County Council and their main process plant contractors, Motherwell Bridge Tacol Ltd. The Warren Spring team expects to be on hand during the commissioning of the plant later this year to provide technical support both to the county council and to the users of the recovered materials.

Doncaster's large-scale refuse recovery plant.



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About Incpen

The industry committee for packaging and the environment (Incpen) was formed in 1974 to provide raw material suppliers, packaging manufacturers, makers of packaged goods and retailers with a means of presenting facts and rational argument about packaging in society and the environment. Incpen is recognised as an authoritative voice on these matters by the European commission, national government departments and agencies, consumer and environmental groups, and the media. The committee is financed solely by subscriptions from its member companies: it receives no subsidies from public funds.

Consumer attitudes

by Dr Lesley Yeomans, Consumer Association

selected beauty spots in the early seventies and revisited them five years later. Incpen is looking deeply into the subject to see what facts can be assembled. In recent years the squeeze on public spending has led to cutbacks in litter collection from many public places – and the packaging industry has received much of the criticism for the resulting mess. The implementation of section 24 of the Control of Pollution Act may help the whole area of litter, and Incpen is co-operating with the Department of the Environment and the Keep Britain Tidy Group.

Some of the criticisms of packaging may be justified but some also arises because members of the public do not understand fully the role of packaging. There is, therefore, much to be said for improving communications among consumers, the manufacturers of materials, and the packers and distributors of consumer goods, as well as those concerned with the environment. Members of organisations representing these interests evolved the code for the packaging of consumer goods which sets out agreed general guidelines as a basis for good packaging practice. They also formed the Packaging Council to supervise the operation of the code and to amend and develop the guidelines in the light of experience.

Keeping Britain tidy

'Tidyman' – the symbol of the Keep Britain Tidy Group – is appearing on more and more packs. It is designed to encourage consumer awareness of the need to dispose of wrappings and packs tidily and not litter the roads and lanes of the country.

The Keep Britain Tidy Group is an independent, non-profit making public service organisation professionally staffed and government approved. Its purpose is to enhance the amenities of the UK's towns and countryside particularly by promoting the prevention and control of litter.

Details from Bostel House (2nd floor), 37 West Street, Brighton BN1 2RE.

There can hardly be a better starting point for a discussion of consumer attitudes to packaging than to quote from the introduction to the code for the packaging of consumer goods (see page 19). This states that the prime function of packaging is to enable consumers to receive products in good condition at the lowest reasonable price. A close examination of packaging, such as that carried out during 1975-76 by the waste management advisory committee's (WMAC) working group on packaging, and containers, reveals that in the main packaging adequately performs this basic function.

However, this fact is not always appreciated by consumers. On the whole this is because they do not understand why products are packaged as they are. There is a significant communications gap between industry and consumers, at least in relation to packaging. Industry goes to considerable lengths to explain the advantages of a new or re-formulated product but rarely the same trouble to explain why the packaging has been changed.

The result is that there is still a widespread belief among consumers that a great deal of packaging is wasteful and unnecessary. Thus in a national omnibus survey, conducted for Consumers' Association in August and September 1978, 61 per cent of all people asked, said that wasteful packaging was a problem. There is no evidence as to why people think this, but some conjectures can be made. One of the most important reasons must be the simple fact that the actual volume of domestic rubbish has increased enormously in recent years. This increase is largely due to the increase in packaging. The trouble is that the customer's interest in packaging is limited to the point of purchase, transport home and storage and use in the home. Most packaging is thrown away very shortly after the consumer reaches home and it is consequently seen as nothing more than waste.

It is clear that people do not appreciate that they are the last link in a long chain from manufacturer, through distribution and retailing to their home, and that the packaging has already served its main function before they ever receive it. Furthermore, the consumer takes no account of the other factors which may dictate the amount and type of packaging that any product needs. These include extra protection during long distribution chains; extended shelf-life; improved standards of hygiene; retail changes.

Neither is it generally appreciated that a greater quantity of packaging does not necessarily mean more expensive packaging. The rapid growth in plastics packaging and generally improved packaging technologies mean that vast amounts of packaging which look expensive are actually extremely cheap to produce, eg blister packs. However, this makes it even less easy to understand the reluctance of industry to provide detailed costs of their packaging. Even the WMAC working group could not obtain reliable statistics about costs of packaging and this must be seen as another cause of ignorance and suspicion on the part of the consumer.

Of course the cost of some packaging does far outweigh the cost of the product, eg household bleach or disinfectant, but consumers must understand that without packaging they would not have such products at all. It would certainly not be possible to lay down a requirement that the cost of packaging should not be greater than x per cent of the cost of the product but the Packaging Council should have the opportunity of evaluating the cost of packaging when they come to consider the packaging code in terms of specific product groups.

Certain types of so-called fun-packaging should not necessarily be expected to meet the strict requirements of the packaging code. Fun packaging includes presentation packs of confectionery, biscuits etc, and certain sorts of cosmetics and toiletries. The psychological value in attractive and even extravagant packs of such products far outweighs the strictly functional considerations. While complaints about over-packaging may be largely without foundation there are undoubtedly a number of irritant features about modern packaging. The first is the increasingly common practice of multiple packaging, whereby several articles, which were traditionally sold singly, are now packed together. Consumers complain that they can no longer buy exactly what they want but have to buy what is offered.

Other irritating features include the difficulties of opening certain packs and the failure to provide adequate closures. These points are covered by the packaging code but in very general terms only. The Packaging Council must strengthen, expand and develop these basic criteria in terms of more detailed codes for specific product categories.

In conclusion, it is certain that consumers will continue to look critically at packaging. They will demand simpler, more functional packaging, yet they will also expect products to be packed in sizes they want, to be fresh, undamaged and easy to handle and use. Industry must be more prepared to supply detailed figures of packaging costs.

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Overseas trade exhibitions

Plenty of room for UK electronic components in Japan

From Merrick Baker-Bates, British embassy, Tokyo

With orders worth £600,000, the 25 British companies who took part in Internepcon Japan from 24 to 27 January were very satisfied with the week's proceedings. It was the seventh year running that the Westminster chamber of commerce had sponsored a joint venture in this electronics show which has become a regular feature early in the year at Tokyo's Harumi international fair ground.

Well-known in Britain for the annual show at Brighton, Internepcon has now established itself in Japan as an important shop window for both domestic and foreign manufacturers. This year almost 27 000 people visited the event, and the British joint-venture stands were busy throughout the four days. This year, for the first time, Internepcon Japan included a semi-conductor show and an exhibition called 'IMMMM', where microcomputers, minicomputers and microprocessors were on display.

The Japanese electronics industry is vast, with production in 1978 valued at £16,000 million. One might think that selling electronic equipment against such a background would be a daunting task, tales of coal to Newcastle. Yet total imports in 1977 from all sources were valued at nearly £945 million, of which £413 million was accounted for by components and the rest by consumer and industrial equipment. The Ministry of International Trade and Industry estimates annual growth for the industry at 10.3 per cent until 1985.

For the immediate future a number of local factors make prospects bright. In the spring of this year the remaining licences will be granted to make fm broadcasting available throughout Japan. This alone is expected to increase home demand for fm radios by about 10 million sets over the next few years. And there will be a valuable replacement market. Multiplex sound television is taking off fast in this society, where the study of English is universal at school and at home and where many television programmes are imported. Multiplex is made more attractive, of course, by providing stereophonic sound, so long a feature of the recorded music market. While there are only 10 stations at present equipped to broadcast in multiplex for a limited number of hours each day, coverage will extend rapidly in the next few years. Another new development will be the start in August this year of a telephone service for the private car. Although confined initially to Tokyo, demand is expected to lead to rapid extension of the system. Finally, cable television is about to be introduced into some of the new housing developments around Tokyo. This, too, will undoubtedly spread rapidly.

British Ambassador Sir Michael Wilford with Dr Wally Rubin, leader of the joint-venture group at Internepcon.

All of these developments will lead to more demand for industrial electronic components. The consumer side of the electronics industry is also developing very quickly, with video tape-recorders, for example, being within the reach of a really mass market in this country. Add micro-computers for cars, cameras, watches, toys, and it is easy to see why the components industry is optimistic about the future. While domestic manufacturers are gearing themselves to meet increased demand, it is hoped that there will be room for a high level of imports. And, given Japan's enormous visible trade surplus with almost every developed country, importing has now become fashionable in the electronics field as well as others.

Britain should be able to take advantage of these trends in the Japanese market. But we still suffer from the fact that the Japanese know relatively little about our electronic components industry. Those who come to Internepcon regularly have found their place in this market. There should be plenty of room for others.

Sweet taste of success in Cologne

From Hilda Mock, British embassy, Bonn

When the ninth international confectionery and biscuit fair (ISM Cologne) – which began on 29 January 1979 – closed its doors on 2 February, exhibitors and visitors alike once more agreed that this was the most important event of its kind in the world.

A total of 640 companies from 27 countries offered their ranges of products to 8400 buyers who had travelled to Cologne from 61 countries from all over the world. This represented an increase of 21 per cent in exhibitors and of 18 per cent in gross stand area. There was also an increase in the number of foreign buyers, particularly from countries such as the United States, Japan, Italy and Yugoslavia. The British confectionery and biscuit industry had no small share in the fair which was described as 'an event of superlatives'. With 54 companies on a British Overseas Trade Board joint venture sponsored by the British Food Export Council, two independent UK firms and 23 others represented on their German agents' stands, we not only had the largest participation ever but also provided the largest foreign contingent at the fair. And the question of finding space to supply British companies with sufficient stand area created more of a problem than before, but our eight-years presence at ISM has made it almost a tradition for buyers from all over the world to visit the 'British Street', as it is fondly called.

Irrespective of their size, British companies at ISM unanimously stated that ISM was the best means for promoting their exports. The quality of visitors and their inquiries or orders were of the highest standard, whether they came from the European continent, north America, Australia, the Far or Middle East. Inquiries received by all ISM exhibitors focused on seasonal goods and on novelties of high quality.

British boats on right tack in Düsseldorf

Products of 112 British firms were on display at the 10th International Düsseldorf boat show – 'Boot 79' – from 20 to 28 January. Despite industrial disputes in the United Kingdom, which caused serious transportation difficulties for many of the British participants and the worst weather in north Germany since 1963, British firms emerged with record orders.

Firm orders in excess of £1¾ million were reported by 28 of the 47 British firms exhibiting on the British Overseas Trade Board's joint-venture scheme, which was sponsored by the Ship and Boat Builders Federation. German agents of the other 65 indirect British exhibitors reported keen interest in British products, particularly in the motor boat and sailing cruiser sector of the market.

JCL Marine, Jack Powles International, Fairline Boats and Marine Projects (Plymouth) each reported substantial orders

for their range of motor cruisers, while the motor sailers and yachts from Westerly Marine, Cobramold, Vervale and Northshore Yacht Yards were all particularly well received. Many German boat owners were looking for the latest electronic navigational aids for their boats and the products of Henry Browne, Brookes and Gatehouse and Electronic Laboratories of Poole all attracted much attention. Three British firms were pioneering in Germany the idea of flotilla holidays and although few firm bookings were confirmed all were hopeful of a high take-up rate from among those expressing an interest.

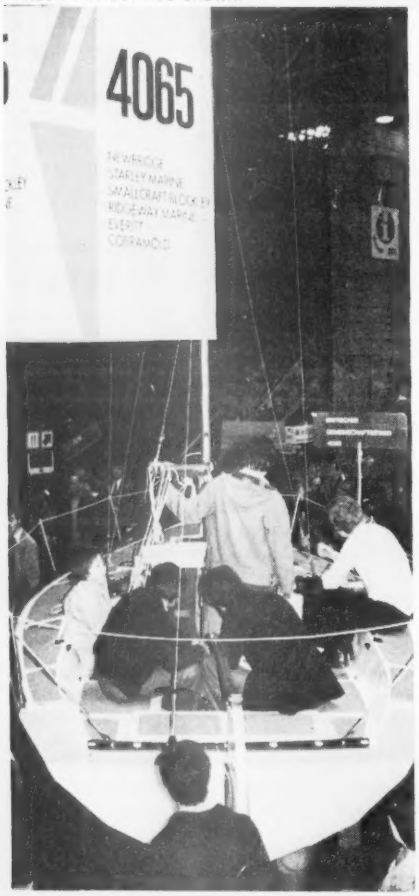
The exhibition filled all 13 permanent halls and one temporary hall of the Düsseldorf trade fairground and covered an area of 121 000 m². Despite weather conditions, which prevented the usual influx of visitors from Holland and southern Germany the exhibition attracted a record attendance of 227 000 visitors from 48 countries. Over 2000 boats on display plus marine equipment and accessories from around 1900 different firms in 31 countries. Everything from folding and inflatable boats, canoes, dinghies and wind surfers to 40 ft cruisers, ocean-going yachts and luxuriously equipped charter cruisers, was on show. However the greatest public interest was reserved for the middle-of-the-range trailerable boats of up to 8 m.

It is estimated that the yachting and boating industry is worth about £500 million a year in Europe, of which nearly £200 million is accounted for in the Federal Republic of Germany alone. In recent years the German boating market has been expanding at a rate of over 10 per cent per year, but the combined effects of the lack of mooring places on the North and Baltic seas and the restrictions now placed on the use of motorised craft on inland lakes is beginning to act as a brake on this sector of the German market. However these developments do not appear to have had any noticeable effects yet on British boat and equipment manufacturers, who, because of their reputation for quality, workmanship and competitive price, have continued to increase their share of the German market and are now running level with Holland as principle suppliers. There is a growing trend, particularly in the middle and southern parts of the Federal Republic of Germany towards trailerable motor boats, yachts and motor and sailing cruisers of up to 8 m which can be towed by a family car and which can be taken down to the Mediterranean and Adriatic Seas for the summer holidays. This is a sector of the market where British manufacturers are particularly strong and it is hoped that this trend will enable Britain to further increase its share of the lucrative German market.

All the direct British exhibitors recognise the importance of this exhibition and almost without exception have expressed their intention to return for the eleventh Düsseldorf boat show – 'Boot 80' – from 19 to 27 January 1980.

Mr T. J. Everard, counsellor (commercial), British embassy, Paris (second from left) on the Decca Record stand at Midem, Cannes.

A keen interest was shown.



Britons put disco music in Cannes

From J. J. Patanchon, vice-consul (commercial), Marseilles

At the thirteenth international record and music publishing market (Midem) held at the Palais des Festivals, Cannes, from 19 to 25 January, 1366 companies were represented compared with 1238 at the corresponding market last year. Over 5500 trade visitors representing 51 countries gathered on the Croisette for the occasion. With 236 companies represented, Great Britain was the second largest participating nation, preceded by the United States (293), and followed by France and West Germany, with 226 and 94 companies respectively. Of the British contingent, 51 firms participated in a joint venture supported by the British Overseas Trade Board, in collaboration with the British phonographic industry and the Music Publishers' Association.

The 'disco sound' was much in evidence this year, following the great success of the films 'Saturday night fever' and 'Grease'. British record producers and music publishers reported an enormous demand for disco material. However, demand for rock-and-roll and punk music was maintained at a satisfactory level.

The Robert Kingston Organisation, music publisher and record producer, secured firm orders against advances in royalties from Scandinavia, West Germany, France, Australia, South Africa, New Zealand, Benelux and the United States. Third World Recording Company, which had taken a stand for the first time in Cannes, received serious inquiries for its Reggae music from Holland, France, Venezuela, Sweden, Canada, Italy, the United States, and Brazil. ATV Music renewed existing sub-publishing agreements worldwide. BBC Records sold finished products to the Netherlands and master productions to Turkey, Portugal and New Zealand. BBC Records was able to present new material to its overseas licencees.

The Association of Professional Recording Studios, while at Cannes to promote the use of British studios by foreign artists, secured bookings from France, Spain, Canada, West Germany, Venezuela and the United States. It also received promising inquiries from South American countries. Windsong Records, exporter of finished product, sold 50 000 lps to Holland, West Germany, Scandinavia and the United States. Finally, Album Reflections, manufacturer, distributor and exporter of record 'album mirrors', sold, subject to contract, its full range worldwide.

The 1979 international record and music publishing market has, once again, lived to its reputation as being the leading venue in its field. Midem's commercial value is unequalled and British participating firms, large and small, were unanimous in considering that the Croisette is an excellent platform from which to launch its latest rock, punk, and disco material worldwide.

The fourteenth Midem will be held in Cannes, 18 to 24 January 1980.

ECGD addresses

The Export Credits Guarantee Department's head office is at Aldermanbury House, Aldermanbury, London EC2P 2EL, tel. 01-606 6699. ECGD has 10 local offices in various parts of the United Kingdom, and these are listed from time to time in *Trade and Industry*.

Overseas trade country data

Argentina

Motor industry law. Argentina's executive power has issued law 21.932 known as the motor industry law changing the rules and regulations governing the sector under the previous law, 19.135. The main points are as follows:

1 Import of cars and commercial vehicles is permitted from 1 February 1979.
2 Local automotive plants will be allowed more flexibility in importing vehicle components.
3 Custom duties will be lowered on a sliding scale and minimum price lists set up.
4 The obligation to include components of local manufacture in vehicles will be gradually reduced.
5 A balanced exchange of components between local and foreign automotive plants is permitted.
6 Authorisation is given for setting up new automotive plants.
7 Authorisation is given for manufacture of new models at local plants.
8 Authorisation is given for local automotive plants to manufacture their own components.

Details of the minimum cif base prices established for imported cars and commercial vehicles, and of the domestic taxes to which they will be liable, are now available from OTAR. Details of the tariff levels which will be applied will be spelt out in a regulating decree to be issued shortly, and a further notice will be issued when this additional information is received.

Inquiries: OTAR 01-248 5757 ext. 474.

Australia

Passenger car quotas. The Australian government has announced an increase to 90 000 vehicles in the interim global quota for passenger cars for 1979. The announcement emphasised that this was an interim adjustment to the global level and that another review would take place next May.

Inquiries: CRE 01-215 5319.
Ref. CRE 1677/78.

Handicrafts – duty free admission. The Australian government has approved new provisions relating to the duty free admission of handicrafts made from textile fabrics.

The by-law has been extended to allow for textile fabrics and articles made up from textile fabrics, containing not less than 95 per cent by weight of natural fibres, to be eligible for duty free admission under the handicraft concession. The 95 per cent criteria will be strictly adhered to and no tolerance will be allowed.

Inquiries: CRE 01-215 5319.
Ref. CRE 36475.

Packaging. The Australian standing committee on packaging has issued an information sheet which covers items such as the form of expressing unit price on package labels, standardisation of package sizes for spirits and pet foods, proposed additional standard size package for edible oils, and packaging of cake. A copy of the information sheet is available.

Inquiries: CRE 01-215 5319.

Anti-dumping – jerricans. The Australian government has received a request from local industry for anti-dumping action to be taken against imports of steel jerricans from Czechoslovakia and Taiwan. Inquiries have been initiated by the Australian customs to determine whether export prices to Australia of jerricans from these countries are less than the normal value on the respective domestic markets.

Inquiries: CRE 01-215 5319.
Ref. CRE 36493.

Lighting fittings. The Australian government has requested the Industries Assistance Commission to inquire into the question whether chokes and ballasts imported at the developing country preferential rate of duty are causing or threatening injury to Australian industry. If the commission concludes that such a threat exists, it is required to state within 45 days from which country or countries developing country margin of preference should be withdrawn or modified.

The public hearing will be held on 19 February at the Industries Assistance Commission, PO Box 80, Canberra, Act 2600, and interested parties intending to give evidence at the hearing should inform the IAC secretary as soon as possible.

Inquiries: CRE 01-215 5314.
Ref: CRE 426/79

Measuring devices. Under a recent customs regulation imports of certain measuring devices which do not bear metric graduations or markings are prohibited.

A table indicating the permitted graduations is available.

Inquiries: CRE 01-215 5319.
Ref: CRE 35184/2

Ceramic floor and wall tiles. A notice in *Trade and Industry*, 10 February 1978, announced that the Industries Assistance Commission had arranged to hold an inquiry into the question of the long-term assistance needs of the sector of industry producing ceramic floor and wall tiles, falling within tariff items 69.07 or 69.08.

The commission has now released a draft report of its inquiry to give interested parties an opportunity to examine and comment on it before final recommendations are made to the government and a further public hearing will be held in the Public Inquiry Room, 16th Floor, 59 Goulburn Street, Sydney, on 26 February to consider submissions. Persons intending to give evidence at the public hearing should inform the commission without delay at its Sydney address.

A copy of the draft report may be obtained from the Department of Trade.

Inquiries: CRE 01-215 5319.
Ref: CRE 865/77.

Bangladesh

Medicines and drugs. The Bangladesh Ministry of Health and Family Planning has published a list of proprietory drugs and medicines of specified foreign origin which have been approved and registered with its drugs administration. These are importable subject to the provisions of the import policy order which is published annually.

Copies of the list are available.

Inquiries: OTAR 01-248 5757 ext. 7062/420.

Belgium

Pharmaceuticals. The *Moniteur Belge* no. 17, 25 January, published three decrees dated 29 November 1978 concerning the labelling of certain medicaments containing insoluble salts of bismuth, antibiotics of the tetracyclin group and certain other antibiotics.

The decrees come into force on the first day of the ninth month after publication.

Copies of these decrees (in French) are available.

Inquiries: OTAR 01-248 5757 ext. 288/466/467.

Chile

Motor vehicles duties. In accordance with Chile's programmed reductions in import duties, the duties on saloon cars and vans were reduced on 1 January from 115 per cent to 105 per cent and on trucks and lorries from 80 per cent to 75 per cent. These duties are levied on

Further information

In many cases further information on the notices published on these pages is available to British exporters from the Department of Trade. The main branches concerned are: Commercial Relations and Exports (CRE) Divisions, 1 Victoria Street, London SW1H 0ET (tel. direct dialling); and Overseas Tariffs and Regulations Section (OTAR), Export Data Branch, Export Services and Promotions Division, Export House, 50 Ludgate Hill, London EC4M 7HU, tel. 01-248 5757. In each case, the relevant information source is indicated at the end of the notice by its initials (OTAR or CRE) and, in the case of OTAR, the telephone extension.

the cif value. Further annual reductions are scheduled to take place as follows:

Per cent

Date	Saloon cars and vans	Trucks and lorries
1 January 1980	95	70
1 January 1981	80	65
1 January 1982	70	60
1 January 1983	55	55

Inquiries: OTAR 01-248 5757 ext. 474/476.

Finland

Products causing health hazards. The Finnish Ministry of Health and Social Affairs have issued detailed regulations on identifying and labelling products causing health hazards.

Decision 286 of 20 April 1978 states that the manufacturer, importer, retailer or anyone handing over or selling substances dangerous to health is responsible for ensuring that the substance carries details on the composition and properties of the substance together with instructions for use and safety instructions according to the decision, and that any wrapping or packaging complies with the regulations. Decision 409 of 6 June 1978 lists products and correct warning symbols, terms etc. These regulations do not apply to pharmaceutic preparations, substances or products which are sold as medicines at chemists, alcoholic drinks or tobacco products.

Copies of an unofficial translation of these regulations may be obtained from OTAR 01-248 5757 ext. 460.

France

Gas central heating. An order was published in the French *Official Journal*, 19 January approving new standards NFD 35-351 (January 1979) and NFD 35-331 (January 1979) and annulling standards NFD 35-331 (June 1969) and NFD 35-331 (December 1977) relating to boilers with atmospheric burners using gas-fuel for hot water central heating.

The standards will come into force:
1 One year after the publication date of the order for appliances that are in line with model-types and not yet marketed in France.
2 Three years after the date of publication of the order for appliances in line with the model-types and already on sale on the French market.

Copies of the French text are available.

Inquiries: OTAR 01-248 5757 ext. 423/408/439.

Iceland

Special goods tax. In the item published in *Trade and Industry*, 10 November 1978 (page 282), the figure in the phrase 'goods in list A attract a 1 per cent tax as before' should be amended to 16 per cent.

Inquiries: OTAR 01-248 5757 ext. 480.

CRE Commercial Relations and Exports Divisions
Tel. Direct dialling (see end of each notice)

OTAR Overseas Tariffs and Regulations Section
Tel. 01-248 5757 (extension at end of each notice)

Israel

Standards. The following Israeli standards have been declared official and compliance with them will be compulsory 60 days from the dates shown.

I.S. 240	Oct 1972	toilet soap (5 September 1978)
I.S. 808	Jan 1977	thermostats for electric water heaters (28 July 1978)
I.S. 10.1	Oct 1976	orange juice concentrate preserved by heat treatment (29 October 1978)
I.S. 297	Mar 1976	melon preserves (30 October 1978)
I.S. 16.1	Oct 1976	grapefruit juice concentrate preserved by heat treatment (29 October 1978)
I.S. 545	Oct 1976	lemon juice concentrate preserved by heat treatment (31 October 1978)
I.S. 730	Oct 1976	preserves of whole peeled tomatoes (31 October 1978)
I.S. 197	Oct 1976	fig compote (30 October 1978)
I.S. 58	Sep 1972	pickled cucumbers (29 October 1978)
I.S. 840	Oct 1972	electric insulating adhesive tape on a polyvinyl chloride base will come into force 300 days from 5 September 1978

The Standards Institute of Israel issues an English translation of these and other standards, and copies may be obtained from the British Standards Institution Library, 2 Park Street, London, W1, tel. 01-629 9000, telex 266933. British exporters requiring technical information on how to comply with these standards are advised to contact Technical Help to Exporters, British Standards Institution, Maylands Avenue, Hemel Hempstead, Herts HP2 45Q, tel. 0442 3111, telex 82424.

Inquiries: OTAR 01-248 5757 ext. 458/461.

Agricultural machinery spares. The Israeli authorities have issued an order stipulating maximum prices for imported spare parts for agricultural machinery. A copy of the order is available from OTAR tel. 01-248 5757 ext. 458/461.

Import duty amendments. The Israeli authorities have issued amendments to the import duty payable on certain items within the headings covered by the following CCCN numbers:

30.02, 29.30, 39.01, 44.15, 48.01, 48.04, 48.15, 85.19, 22.08, 29.04, 38.19.

No further information is available.

Inquiries: OTAR 01-248 5757 ext. 458/461.

Industrial and R&D collaboration. In the item in *Trade and Industry*, 2 February, pages 235-36, the third paragraph on page 236 should be amended as follows: for '30 per cent' read '80 per cent'.

Republic of (South) Korea

New tariff schedule. An English translation of the 1979 Korean tariff has been received. The new tariff includes many duty changes – most of which are reductions effective from 1 January. It incorporates changes to the CCC nomenclature recommended by the Customs Co-operation Council (see *Trade and Industry*, 2 December 1977).

Inquiries: OTAR 01-248 5757 ext. 420/475.

Malaysia

Arsenic pentoxide and acids of arsenic. The Malaysian government has passed the Customs (Prohibition of Imports) Amendment no. 12 Order 1978 abolishing the requirement for an import licence to import arsenic pentoxide and acids of arsenic (CCCN no. 28.13.110) with effect from 7 December 1978.

Polyethylene pipes. The Malaysian government's Sales Tax (Exemption) Amendment no. 3 Order 1978, came into effect on 7 December 1978, exempting high-density polyethylene pipes (CCCN no. 39.02 231) from the payment of sales tax when imported.

Timber. The Malaysian government has passed the Customs (Prohibition of Imports) Amendment no. 13 Order 1978. From 14 December 1978 an import licence is no longer required to import the following:

CCCN nos. 44.03, 44.04: wood in the rough, whether or not stripped of its bark or merely roughed down: wood roughly squared or half-squared, but not further manufactured.

The government has also passed the Customs Duties (Exemption no. 2) Amendment no. 4 Order 1978 which exempts timber falling under heading numbers 44.03 and 44.04 from the payment of import duty on condition that the timber is imported into peninsular Malaysia and that the imports are covered by valid import licences issued by the Malaysian timber industry board.

Rods and bars, slugs of unwrought aluminium. The Malaysian government has from 7 December 1978 amended the first schedule to the Customs Duties Order 1978 to read as follows:

Heading/Description	Unit of quantity	Import duty: Full	Import duty: Preferential
74.03 Wrought bars, rods, angles, shapes and sections of copper; copper wire: Rods and bars;			
74.03 210 of unalloyed copper	tonne	13% or $430 whichever is the higher	
74.03 220 of brass	tonne	Nil	
74.03 230 of bronze	tonne	Nil	
74.03 290 of other copper alloys	tonne	Nil	

The government has also passed the Customs Duties Amendment no. 23 Order 1978. This also came into force on 7 December and amends the first schedule to the Customs Duties Order 1978 so that the import duty on slugs, round, of unwrought aluminium falling under CCCN no. 76.01 201 becomes nil.

Inquiries: OTAR 01-248 5757 ext. 461/468/469.

Portugal

Hunting and sporting weapons. Portuguese decree-law 238 of 6 April 1976 exempted from import duties, parts and components of hunting and sporting weapons under CCCN headings 93.06.02 and 93.06.03.

Diario da Republica, first series, no 6 of 8 January, published decree-law 1/79 which further exempts these parts and components from the charges payable for the authorisation to import weapons, munitions and accessories.

Inquiries: OTAR 01-248 5757 ext. 458/461.

South Africa

Customs tariff changes. The following amendments were published in the South African *Government Gazette*, 19 January:

R75, CCCN 32.08: Tariff heading 32.08 is restated and the rate of duty on prepared pigments is reduced from 15 per cent to free.

R76, CCCN 51.01 and 55.06: The effect of this amendment is that: a The rate of duty on prepared sewing yarn of man-made fibres (continuous) (excluding those of synthetic fibres), not put up for retail sale, is increased from 10 per cent to 25 per cent. b Specific provisions at a rate of duty 25 per cent are made for yarn of man-made fibres (continuous) not put up for retail sale twisted, plied, bleached or dyed exceeding 135 dtex but not exceeding 350 dtex with a tenacity exceeding 5. 3c N/dtex but not exceeding 7. 5 N/dtex. c The rate of duty on cotton yarn (excluding prepared sewing yarn), put up for retail sale, is increased from 5 per cent to 25 per cent.

R77, CCCN 74.11: Tariff heading 74.11 is restated.

R78, CCCN 83.13: The rate of duty on bungs of base metal is amended from free (general) to 15 per cent (general) and free (mfn).

R79, CCCN 85.03: Specific provision is made for button-type primary cells and the rate of duty on those with a height not exceeding 7 mm is reduced from 30 per cent (general) and 20 per cent (preferential) to 10 per cent (general) and free (preferential).

R80, Surcharge item 175.00. CCCN 74.00: This amendment is consequential to the amendment of tariff heading 74.11 in part I of schedule I.

Industrial rebates

R81, items 306.02 and 316.01 CCCN 39.01, 39.02: Provision is made for the rebate of full duty less 20 per cent on certain tubes of ethylene polymers or copolymers, for packing sterile intravenous solutions.

R82 item 307.01 CCCN 29.14: Provision is made for a rebate of the full duty on vinyl esters of saturated monocarboxylic acids for the manufacture of artificial resins and plastic materials.

R83, item 316.08 CCCN 85.19: The correct tariff heading number under which resistors are classified, is indicated in item 316.08.

R84, item 321.01 CCCN 32.08: The provision for a rebate of duty or prepared pigments of the kind used in the ceramic, enamelling and glass industries, is withdrawn as these pigments are now free of duty.

R85, items 311.03, 311.05 CCCN 51.01:

a Provision is made for a rebate of the full duty on yarn of man-made fibres (continuous) twisted, plied, bleached or dyed, exceeding 135 dtex but not exceeding 350 dtex, with a tenacity exceeding 5. 3 CN/dtex but not exceeding 7. 5 CN/dtex, for weaving of fabrics.

b The provision for a rebate of duty on certain yarn of polyester or polyamide fibres for the manufacturer of sewing thread, is withdrawn.

General rebates

R86, item 490.40: The effect of this notice is that tower cranes may no longer be temporarily admitted under rebate of duty for use on contract in civil engineering or construction work.

Drawbacks and refunds of customs

R87, item 506.06 CCCN 39.06: Provision is made for a drawback of the full duty on sodium lingosulphonate used in the manufacture of fungicides with copper oxychloride as active ingredient, for export.

Inquiries: OTAR 01-248 5757 ext. 471/472/473.

Spain

Liberalisation of textured protein. The Spanish *State Gazette*, 27 January, published a resolution of the Ministry of Commerce, liberalising the importation of texturised soya protein (CCCN 21.07 D).

Inquiries: OTAR 01-248 5757 ext. 461/458/459/460.

Reduction in import duty. The Spanish *State Gazette* 27 January published royal decree 125/1979, extending for three months up to 29 April 1979 the partial reduction of import duties (20 per cent reduction on the excess of 10 per cent import duty) established by royal decree 1780/1978.

Inquiries: OTAR 01-248 5757 ext. 461/458/459/460.

Office machines. The Spanish *State Gazette* 26 January published royal decree 3259/1978 of the Ministry of Commerce, establishing new import duties as follows:

CCCN/Description	Import duty %
84.52 B	
Accounting machines:	
1. Electronic (maximum specific duty 300 000 pesetas per unit)	16
2. Other	13
84.53	
Automatic computer machine index units	
1. Numerical or digital (maximum specific duty 300 000 pesetas per unit)	16
2. Other	Free

Inquiries: OTAR 01-248 5757 ext. 461/458/459/460.

Dangerous goods. The Spanish *State Gazette* 11 January published an order of the 26 December 1978 by the Ministerio de Hacienda, laying down rules for the importation of dangerous goods, either explosive, inflammable or difficult to handle, listed in the European agreement for the international transport of dangerous goods by road, known as ADR.

A copy of the order, in Spanish, is available on request.

Inquiries: OTAR 01-248 5757 ext. 461/458/459/460.

Sri Lanka

Permitted food colourings. Although legislation is still going through parliament for a new food law the Sri Lanka *Gazette* no. 328, 28 July 1978, announced new regulations on permitted colourings and additives for food.

Copies of the regulations are available from OTAR 01-248 5757 ext. 7062/420.

Tanzania

Devaluation. The Tanzanian government has devalued the Tanzanian shilling. The new rate for the pound sterling is approximately 16.62 compared to 14.9 before devaluation.

Inquiries: CRE 01-215 5226.

United States

Rpm adaptors. The US Treasury opened on 31 January an anti-dumping investigation into the supply of rpm adaptors from the United Kingdom and has referred the case to the US International Trade Commission for a preliminary injury determination. The commission's determination is due 30 days from the day of initiation.

Inquiries: CRE 01-215 5397.

Speciality steel. Imports in pounds weight from the EEC for the product under quota as at 12 January 1979:

Plates of stainless steel (item 923.21) 4 406 545

Inquiries: CRE 01-215 5079.

Food additives: cloves. The United States *Federal Register*, 19 January, published a final rule by the Food and Drug Administration affirming the status of cloves and derivatives as generally recognised as safe as direct human food ingredients. A copy of the text is available.

Inquiries: OTAR 01-248 5757 ext. 456/457/7312.

Uruguay

Import surcharge reductions. Decree No 736/978 of 26 December 1978, published in *Diario Oficial* of 10 January, reduces the import surcharge rates of 150 per cent and 110 per cent to 110 per cent and 90 per cent respectively, as from 1 January. Article 3 of the same decree establishes that all capital goods imported after its coming into force will attract only the minimum surcharge of 10 per cent. Also, as scheduled in decree 588/977 of 20 October 1977, the surcharge rate of 65 per cent was reduced to 50 per cent from 1 January.

Inquiries: OTAR 01-248 5757 ext. 474/476.

Zambia

Budget. The Zambian Minister of Finance presented his budget to parliament on 26 January. Various measures included:

Reduction in company tax from 50 per cent to 48 per cent (35 per cent to 30 per cent for companies in rural areas). Sales tax on clothing and furniture and income tax in the middle and top bands also reduced.

Mineral tax on cobalt raised from 10 per cent to 20 per cent, and tax on beer, petrol and theatre licences increased.

The import licence fee doubled.

Inquiries: CRE 01-215 5794.

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OTAR Overseas Tariffs and Regulations Section
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Statistics

The economy: selected indicators [2]

Series are seasonally adjusted except where shown otherwise

	Gross domestic product (average estimate)	Consumers' expenditure	Fixed capital expenditure			Changes in stocks				Balance of payments		
				of which			of which					
			Total	Manufacturing industry	Distributive and service industries excl. shipping	Total	Manufacturing industry	Wholesalers [1]	Retailers [1]	Current balance	Visible balance	Invisible balance
	at 1975 prices		at 1975 prices			at 1975 prices				at current prices		
Base of index Series in Stock level at end-1977	1975	£ million	£ million			34,469	20,261	£ million 4,540	3,181	£ million		
1973	103.4	65 497	21 609	3 504	4 674	2 983	1 336	432	624	−999	−2 383	1 384
1974	101.5	64 070	21 164	3 822	4 605	1 462	1 288	361	−180	−3 591	−5 235	1 644
1975	100.0	63 192	20 817	3 522	3 841	−1 925	−1 221	−249	−100	−1 855	−3 236	1 381
1976	102.9	63 320	20 489	3 345	3 926	261	316	131	13	−1 137	−3 589	2 452
1977	104.9	62 732	19 738	3 573	4 325	1 051	442	266	29	406	−1 709	2 115
1978		66 261								109 p	−1 104	1 213 p
1976 2nd qtr	102.7	15 785	5 137	828	972	−17	−29	−10	−67	−315	−949	634
3rd qtr	103.3	15 884	5 168	849	1 005	189	99	81	46	−417	−1 132	715
4th qtr	104.0	15 927	4 997	856	1 014	214	260	17	27	−326	−958	632
1977 1st qtr	103.8	15 619	4 794	851	1 030	442	235	82	117	−480	−973	493
2nd qtr	104.8	15 495	5 025	879	1 044	354	97	179	4	−280	−762	482
3rd qtr	105.0	15 777	4 965	910	1 103	6	−6	−80	−59	575	31	544
4th qtr	105.9	15 841	4 954	932	1 149	249	116	85	−33	591	−5	596
1978 1st qtr	106.1	16 311	5 030	920	1 169	460	38	81	62	−406	−635	229
2nd qtr	108.0	16 370	5 056	960	1 180	432	272	−62	128	133	−175	308
3rd qtr	108.9	16 810	5 029	968	1 159	434	162	38	54	−18	−334	316
4th qtr		16 770 pe							89	400 p	40	360 p
% change last 2 qtrs on prev. 2 qtrs.	+2.3	+2.8	+1.0	+4.1	+0.9							
on a year earlier	+3.4	+6.2	+1.0	+7.8	+8.9							

	Industrial production		Personal expenditure		Prices and earnings					Labour (UK)				Visible trade (volume)	
	Total all industries	Total manufacturing industries	Retail sales	Cars: new registrations	Retail prices		Wholesale prices: all manufacturing industry		Average gross earnings of all employees (GB, all industries and services covered)	Unemployed excluding school leavers and adult students		Unfilled vacancies for adults		Export	Import
				monthly averages		% increase on a year earlier	basic materials and fuel used	manufactured products: home sales		mid-month count	% of total employees	mid-month count		On a balance of payment basis	
	at 1975 prices		at 1971 prices		(not seasonally adjusted)				(old series)	thousands		thousands		at 1975 prices	
Base of index £m in base year Series in	1975	1975	1971 16,296	thousands	Jan. 1974		1975	1975	Jan. 1970	thousands		thousands		1975 19,463	1975 22,699
1973	109.5	108.4	110.3	137.1	93.5	9.1	58.8	66.7	152.1	611.0	2.6	307.0		97.8	108.7
1974	105.1	106.5	109.0	102.8	108.5	16.0	86.8	81.8	179.1	599.7[1]	2.6[1]	302.7[1]		104.3	109.7
1975	100.0	100.0	106.7	97.2	134.8	24.2	100.0	100.0	226.6	929.0	3.9	150.0[1]		100.0	100.0
1976	102.0	101.4	106.5	104.7	157.1	16.5	127.0	117.3	261.9	1 269.8[1]	5.4[1]	120.4[1]		109.8	105.7
1977	105.8	102.8	103.6	107.1	182.0	15.8	145.6	140.5	288.5	1 378.1	5.8	155.6[1]		118.9	107.1
1978	109.7	103.6	109.2	130.1	197.1	8.3	144.6 p	153.3 p		1 375.6	5.8	210.3		123.3	113.9
1977 1st qtr	105.5	103.8	103.3	104	174.1	16.5	144.8	133.0	280.0	1 329.5	5.6	..		115.8	109.4
2nd qtr	105.6	102.4	102.4	103	181.9	17.4	148.8	139.6	285.3	1 340.6	5.6	157.7		118.0	109.6
3rd qtr	106.2	103.0	104.2	112	184.7	16.5	146.5	143.8	288.3	1 414.6	5.9	151.9		124.4	106.6
4th qtr	105.8	101.9	104.7	110	187.4	13.1	142.2	145.8	300.4	1 427.8	6.0	160.1		117.6	102.7
1978 1st qtr	106.9	102.1	106.4	131	190.6	9.5	140.2	149.2	310.8	1 409.4	5.9	187.7		119.5	114.1
2nd qtr	110.9	104.7	107.9	132	195.8	7.7	146.3	151.8	329.0	1 372.7	5.7	210.3		122.0	110.3
3rd qtr	111.2	104.9	110.7	135	199.2	7.8	144.9	154.8	334.6	1 380.5	5.8	213.0		125.3	116.1
4th qtr	109.9	102.7	111.7	123	202.6	8.1	147.1	157.3		1 339.7	5.6	230.3		126.2	115.1
1978 Jan	106.7	102.1	105.3	127	189.5	9.9	139.4	148.3	306.3	1 419.2	5.9	180.3		111.2	114.4
Feb	107.3	102.0	106.7	122	190.6	9.5	139.1	149.2	311.2	1 409.0	5.9	187.0		127.0	111.1
Mar	106.7	102.3	107.2	145	191.8	9.1	142.0	150.0	314.8	1 400.0	5.9	195.8		120.4	116.7
Apr	111.2	105.2	106.9	134	194.6	7.9	145.1	150.9	325.7	1 387.1	5.8	203.7		125.6	104.4
May	110.1	103.4	108.2	126	195.7	7.7	146.8	151.9	327.2	1 366.4	5.7	209.9		119.0	114.7
Jun	111.4	105.4	108.6	135	197.2	7.4	147.0	152.7	334.0	1 364.7	5.7	217.4		121.4	111.8
Jul	111.4	105.0	111.0	109	198.1	7.8	145.8	153.8	332.7	1 371.4	5.7	211.0		126.3	116.1
Aug	111.7	105.5	111.7	148	199.4	8.0	144.2	154.8	333.2	1 392.1	5.8	209.3		124.4	111.3
Sep	110.5	104.2	109.6	146	200.2	7.8	144.8	155.7	338.0	1 378.3	5.8	218.7		125.1	120.8
Oct	108.9	102.1	110.2	134	201.1	7.8	145.7	156.6	344.8	1 359.6	5.7	228.4		127.4	111.9
Nov	109.6	102.5	110.5	119	202.5	8.1	147.3	157.1	343.5 p	1 338.8	5.6	231.3		124.6	120.3
Dec	113.3 p	103.6 p	113.8	115	204.2	8.4	148.2 p	158.3 p		1 320.7	5.5	231.2		126.7	113.0
1979 Jan			109½ p				150.6 p	159.8 p		1 339.1	5.6	235.9			
% change latest 3 months															
on prev. 3 months	−1.2	−2.1	+1.0	−8.7	+1.7		+2.6	+1.7	+2.6	−3.2		+6.4		+½	−1
on a year earlier	+3.9	−0.8	+5.8	+12.2	+8.1		+5.6	+7.9	+15.7	−6.4		+38.4		+7½	+12

p Provisional e Estimate pe 1st preliminary estimate [1] Average of available months [2] Including figures published by 13 February 1979

Inquiries: 01-215 3453

Retail sales: provisional estimate for January

Volume

The provisional estimate of the seasonally adjusted index of the volume of retail sales in January is 109½ (1971=100). Since the response has been lower than normal the estimate is subject to a greater margin of uncertainty.

The estimate indicates a fall in trade from the level in December with an increase in food shop sales being more than offset by a fall in sales of non-food shops.

The volume of sales in the three months November to January was 1 per cent higher than in the previous three months.

Value

Based on non-seasonally adjusted data, the provisional estimate of the value of total retail sales in January was 14 per cent higher than in January 1978.

Inquiries: Department of Trade, Economics and Statistics Division 6C, Room 351, Sanctuary Buildings, 20 Great Smith Street, London SW1P 3DB, tel. 01-215 3705.

Retail sales: volume and value

	Volume seasonally adjusted index (1971 = 100)		Value not seasonally adjusted – percentage change compared with a year earlier
1977		**1977**	
1st qtr	*103.3*	1st qtr	+14
2nd	102.4	2nd	+13
3rd	104.2	3rd	+15
4th	104.7	4th	+13
1978		**1978**	
1st qtr	106.4	1st qtr	+13
2nd	107.9	2nd	+15
3rd	110.7	3rd	+14
4th	111.7	4th	+14
1977		**1977**	
Oct	103.1	Oct	+12
Nov	103.6	Nov	+11
Dec	106.9	Dec	+16
1978		**1978**	
Jan	105.3	Jan	+12
Oct	110.2	Oct	+14
Nov	110.5	Nov	+13
Dec	113.8	Dec	+14
1979		**1979**	
Jan	109½ p	Jan	+14 p

p Provisional.

Notes

The volume index is given to the nearest half per cent. The percentage increase in value compared with a year earlier is given to the nearest whole number.

Estimates are based on early returns to the monthly inquiry. These returns cover approaching one half, by turnover, of information available at the final stage. Over the last 12 months the average difference (ignoring sign) between provisional and final estimates was 0.5 per cent. However, as with all estimates based on partial data, caution must be exercised in interpreting a single month's figures.

When using the volume figures, it should be borne in mind that, when price increases are large, the various problems associated with revaluation of the value series to constant prices become more acute. Thus, the relative accuracy with which volume changes have been measured is likely to have been reduced in recent periods.

The value estimates are compiled inclusive of VAT, and will, therefore, reflect changes in the rates of VAT. The volume estimates, however, are not affected by these changes since the retail price indices used to 'deflate' the value data are themselves inclusive of VAT.

The seasonally adjusted series include, where appropriate, adjustments for the timing of holidays. For example, these adjustments include the effects of the Christmas and new year holidays and any annual 'sales' over this period. No adjustments are made to the non-seasonally adjusted data.

The monthly index numbers of retail sales were revised when the final estimate for December was published. Further details are given in *Trade and Industry* of 9 February.

The final figures for January are due to be published in a press notice on Monday, 5 March.

Catering trades' turnover in the fourth quarter 1978

Catering turnover, at current prices and after seasonal adjustment, was 1 per cent higher in the fourth quarter of 1978 compared with the third quarter. For the year as a whole, catering turnover was 12 per cent higher in 1978 compared with 1977.

Recent percentage increases compared with corresponding quarters a year earlier (at current prices but not seasonally adjusted) for the main kinds of business are:

	All caterers	Licensed hotels and holiday camps	Restaurants, cafes and fish and chip shops	Public houses	Canteens
1977					
1st qtr	14	21	14	12	18
2nd	10	22	10	7	13
3rd	11	19	9	8	12
4th	12	20	10	11	10
1978					
1st qtr	12	17	10	12	7
2nd	12	17	12	9	13
3rd	12	17 r	13 r	10	9 r
4th	12	21	13	9	8

The Easter bank holiday fell entirely in the second quarter in 1977 and entirely in the first quarter in 1978. r = Revised figure.

Compared with the fourth quarter of 1977, catering turnover in the fourth quarter of 1978 increased by 12 per cent overall; the increases recorded for each kind of business were: licensed hotels and holiday camps 21 per cent; restaurants, cafes and fish and chip shops 13 per cent; public houses 9 per cent and canteens 8 per cent.

Turnover of all caterers, seasonally adjusted

Index numbers of turnover per week [1]
Value at current prices (turnover in 1969 = £2,533 million) — Great Britain 1969 = 100

	Year	1st qtr	2nd qtr	3rd qtr	4th qtr
1969	100	97	100	102 *	103
1970	108	105	108	109	112
1971	118	115	117	119	122
1972	131	125	128	133	138
1973	148	142	146	150	153
1974	170	159	166	173	180
1975	201	187 *	198	208	210
1976	230	215	229	237	237
1977	256	245	253	263	265
1978	287	274	282	294 r	297

[1] Turnover includes VAT; the quarterly periods consist of 13 weeks except * which are of 14 weeks. The fourth quarter 1978 period was the 13 weeks from 1 October 1978 to 30 December 1978, the fourth quarter 1977 period was the 13 weeks from 2 October 1977 to 31 December 1977.
r Revised figure.

Inquiries: 01-215 3177.

Private enterprise housebuilding: November inquiry

Returns made by builders in November suggest that they were then expecting to start about 160 000 private sector houses and flats in Great Britain during 1979. These estimates, derived from the latest of the periodic sample inquiries of firms which build houses for sale, are published by the Department of the Environment.

The corresponding estimate for 1979 from an inquiry in July was 135 000 starts. Private housing starts in the year ending 30 November 1978 were 158 000.

It is estimated that builders owned land with planning permission for about 315 000 dwellings at the end of October. This is higher than the estimate of stock derived from the last inquiry and almost three times the 107 000 dwellings which these firms expect to start during 1979 for speculative sale on their own account.

Builders and property developers are estimated to have had about 10 000 unsold completed, or virtually completed, dwellings at the end of October compared with 12 000 at the end of June and 23 000 a year ago.

Inquiries: Department of the Environment, tel. 01-212 3490/7071

Business Monitors

The following titles and issues of Business monitors are now available.

PRODUCTION SERIES
Monthly at £5.40 each per year post free:
PM 471.1 Wood chipboard for December 1978

Quarterly at £1.95 each per year post free:
PQ 239.1 Spirit distilling and compounding for third quarter 1978
PQ 381.1 Motor vehicle manufacturing for third quarter 1978
PQ 399.6 Metal hollow-ware for third quarter 1978

MISCELLANEOUS SERIES
Monthly at £5.40 each per year post free:
MQ 7 Acquisition and mergers of industrial and commercial companies for fourth quarter 1978
M 10 Overseas trade analysed in terms of industries for first, second and third quarters 1978

SERVICE AND DISTRIBUTIVE SERIES
SD 8 Instalment credit business of retailers for December 1978

1974 and 1975 Report on the Censuses of Production (price including postage shown in brackets).
PA 211 Grain milling (92p)
PA 213 Biscuits (92p)
PA 217 Cocoa, chocolate and sugar confectionery (92p)
PA 218 Fruit and vegetable products (92p)
PA 271.2 Organic chemicals (92p)
PA 277 Dyestuffs and pigments (92p)
PA 279.1 Polishes (92p)
PA 279.3 Explosives and fireworks (92p)
PA 311 Iron and steel (general) (92p)
PA 349.1 Ball, roller, plain and other bearings (92p)
PA 352 Watches and clocks (92p)
PA 364 Radio and electronic components (92p)
PA 381.1 Motor vehicle manufacturing (£1.07)
PA 412 Spinning and doubling on the cotton and flax systems (92p)
PA 422.2 Canvas goods and sacks and other made-up textiles (92p)
PA 423 Textile finishing (92p)
PA 445 Dresses, lingerie, infants' wear, etc (92p)
PA 446 Hats, caps and millinery (92p)
PA 461.1 Refractory goods (92p)
PA 472 Furniture and upholstery (92p)
PA 489 General printing and publishing (92p)

Retailers' stocks in December

Based on the non-seasonally adjusted data of table 1, the level of stocks at book values in December was £786 million lower than in the previous month and 18 per cent higher than the same month a year earlier; at constant (1975) prices it was 10 per cent higher than a year earlier.

The estimate of the value of physical increase of retailers' stocks at 1975 prices and seasonally adjusted (table 2) suggests a decrease of £88 million. It would therefore appear that the abnormally high level of sales in December has reduced retailers stockholdings and that the large increase of £129 million in stockholdings in November may have reflected, partly, anticipation by retailers of that high level of sales. Although the level of stocks fell back fairly sharply in December it remained higher than in earlier months of 1978 probably because of the increase in the volume of sales during the year. As a consequence of these movements in stocks and sales, their ratio in December (table 3) fell back to the level of the third quarter of last year.

Inquiries: Department of Trade, Economics and Statistics Division 6c, Room 351, Sanctuary Buildings, 20 Great Smith Street, London SW1P 3 DB, tel. 01-215 3705.

Table 1 Level of retailers' stocks

£ million — At cost at end of month

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
At book values												
1975	2 766	2 814	2 947	2 856	2 948	2 985	2 962	2 963	3 139	3 452	3 700	3 333
1976	3 151	3 195	3 388	3 389	3 382	3 379	3 311	3 319	3 547	3 941	4 229	3 799
1977	3 656	3 726	4 095	4 163	4 165	4 220	4 029	4 037	4 286	4 695	5 170	4 417
1978	4 197	4 220	4 522	4 597	4 625	4 744	4 637	4 658	4 932	5 458	6 004	5 218
Change in book values												
1975	−120	48	133	−91	92	37	−23	1	176	313	248	−367
1976	−182	44	193	1	−7	−3	−68	8	228	394	288	−430
1977	−143	70	369	68	2	55	−191	8	249	409	475	−753
1978	−220	23	302	75	28	119	−107	21	274	526	546	−786
Percentage change on a year earlier												
1975	15	17	17	10	10	10	10	11	13	14	16	15
1976	14	14	15	19	15	13	12	12	13	14	14	14
1977	16	17	21	23	23	25	22	22	21	19	22	16
1978	15	13	10	10	11	12	15	15	15	16	16	18
At constant (1975) prices – percentage change on a year earlier												
1975	−7	−6	−7	−12	−12	−11	−11	−10	−7	−5	−3	−3
1976	−2	−2	—	5	2	1	1	1	1	2	1	—
1977	1	1	4	5	5	6	3	3	3	2	5	1
1978	1	1	−1	—	1	3	6	6	7	8	8	10

Table 2 Retailers' stocks at 1975 prices

Seasonally adjusted — £ million

	Stocks level	Value of physical increase
1971		
1st qtr	2 720	−34
2nd	2 722	2
3rd	2 738	16
4th	2 766	28
1972		
1st qtr	2 776	10
2nd	2 834	58
3rd	2 809	−25
4th	2 795	−14
1973		
1st qtr	2 934	139
2nd	3 248	314
3rd	3 323	75
4th	3 419	96
1974		
1st qtr	3 356	−63
2nd	3 409	53
3rd	3 315	−94
4th	3 239	−76
1975		
1st qtr	3 134	−105
2nd	3 039	−95
3rd	3 079	40
4th	3 139	60
1976		
1st qtr	3 146	7
2nd	3 079	−67
3rd	3 125	46
4th	3 152	27
1977		
1st qtr	3 269	117
2nd	3 273	4
3rd	3 214	−59
4th	3 181	−33
1978		
1st qtr	3 243	62
2nd	3 371	128
3rd	3 425	54
4th	3 514	89
1978		
July	3 366	−5
August	3 413	47
September	3 425	12
October	3 473	48
November	3 602	129
December	3 514	−88

Table 3 Relationship of retailers' stocks to retail sales

Index numbers – fourth quarter 1974 = 100 — Seasonally adjusted

	Stock levels at 1975 prices	Retail sales at 1971 prices	Ratio of stocks to sales
1966	77	83	93.6
1967	80	84	94.5
1968	84	87	95.9
1969	85	88	97.5
1970	85	90	94.8
1971	85	91	93.7
1972	86	96	89.9
1973	106	100	105.0
1974	100	99	100.7
1975	97	97	99.7
1976	97	97	100.3
1977	98	94	104.0
1978	108	99	109.0
1975			
1st qtr	97	100	97.0
2nd	94	99	94.9
3rd	95	95	100.0
4th	97	95	102.1
1976			
1st qtr	97	96	100.7
2nd	95	97	97.8 r
3rd	96	98	98.8 r
4th	97	97 r	100.7 r
1977			
1st qtr	101	94	107.2
2nd	101	93	108.3 r
3rd	99	95	104.5 r
4th	98	95	103.0 r
1978			
1st qtr	100	97	103.3 r
2nd	104	98	105.9 r
3rd	106	101	104.8 r
4th	108	102	106.6
1978			
July	104	100 r	103.7 r
August	105	102	103.5 r
September	106	100	105.9 r
October	107	100	106.8 r
November	111	101 r	110.5 r
December	108	104	104.6
1979			
January		100 p	

Notes

1 The book values are valued exclusive of VAT.

2 For the estimates at constant prices, it should be borne in mind that, when price increases are large, the various problems associated with revaluation of the value series to constant prices become more acute. Thus the relative accuracy with which constant price changes have been measured is likely to have been reduced in recent periods.

3 The statistics given in table 2 were introduced in an article in *Trade and Industry*, 28 March 1975, and those in table 3 were introduced in an article in the issue of 17 March 1978.

4 Long-run series back to 1970 for table 1 and to 1967 for table 2 were included in the article in *Trade and Industry*, 22 September 1972.

Vehicle production: provisional estimates for January

Provisional estimates of vehicle production in the United Kingdom in the four weeks ending 27 January 1979 are shown below. More detailed production figures, together with revised seasonally adjusted figures, are due to be published on 22 February 1979.

Inquiries: Department of Industry, Dean Bradley House, 52 Horseferry Road, London SW1P 2AG, tel 01-212 0788.

Thousands

		Passenger cars		Commercial vehicles	
	No. of weeks	Recorded	Seasonally adjusted (monthly average)	Recorded	Seasonally adjusted (monthly average)
1975	52	1 268	106	380.7	31.7
1976	53	1 333	111	372.1	31.0
1977	52	1 316	110	398.3	33.2
1978	52	1 223	102	384.5	32.0
1978					
Jan	4	111	111	31.1	33.3
Feb	4	108	111	30.7	30.9
Mar	5	139	125	41.9	36.2
Apr	4	119	120	35.0	36.1
May	4	122	105	37.8	35.2
Jun	5	122	110	39.5	34.3
Jul	4	65	91	27.2	34.0
Aug	4	89	114	21.2	30.9
Sep	5	107	111	33.8	32.5
Oct	4	79	79	26.3	25.6
Nov	4	58	53	24.3	23.6
Dec	5	104	93	35.7	31.7
1979					
Jan	4	92	93	31.7	34.1
Aug-Oct 1978			101		29.7
Nov 78-Jan 79			80		29.8
Percentage change			−21		N/C

Notes for table 3

1 The index numbers of the level of stocks relate to the end of each time period; the index of sales refers to retail sales during the period.

2 The 1971 = 100 index of retail sales has been rebased on the fourth quarter of 1974 for the purpose of this table.

3 The index numbers of the stocks sales ratio are calculated from unrounded estimates of the data in the previous two columns.

4 The revisions to the series for retail sales and consequently the ratio of stocks to sales over the last three years arise from revisions to the seasonal adjustments which now incorporate the experience of 1978. There are no revisions to the stocks series.

p Provisional.

r Revised

Foreign arrivals in the United Kingdom in November 1978

During November last year 537 000 foreign nationals entered the United Kingdom – a decrease of 1 per cent on November 1977. Arrivals for the first 11 months of the year, totalling 9 242 000, also showed a decrease of 1 per cent on the same period of 1977.

These figures are released by the Department of Trade and the British Tourist Authority. They relate to Home Office returns of arrivals of nationals of foreign countries except the Irish Republic and the commonwealth (see notes).

Arrivals from the EEC

In November 1978 arrivals of EEC nationals were 265 000, 5 per cent down on November 1977. Only nationals of West Germany and the Netherlands showed increases, of 18 per cent and 2 per cent respectively. Of the remaining EEC countries, the largest decreases were in arrivals of Italians (down 24 per cent) and French and Belgian/Luxembourg nationals (both down 12 per cent).

Total EEC arrivals for the first 11 months of the year were down 2 per cent to 4 882 000 from 4 992 000 in the same period of 1977. The picture by nationality for the whole period is much the same as for November, with the largest decreases occurring in arrivals of French and Belgian/Luxembourg nationals (down 10 per cent and 9 per cent respectively).

Rest of western Europe

In November 1978, nationals of other western European countries arriving in the UK totalled 102 000, a 1 per cent increase on the 101 000 recorded in November 1977. The pattern of arrivals differs from the preceding months in that most countries show an increase, the largest being of Greek nationals (up 29 per cent), Yugoslavians (up 20 per cent) and Swiss nationals (up 17 per cent). The only nationalities showing a fall were Turkish, Norwegian and Swedish, by 62 per cent, 10 per cent and 6 per cent respectively.

During the first 11 months of 1978 total arrivals of nationals of the rest of western Europe fell by 10 per cent to 1 353 000 compared with 1 502 000 in the corresponding period of the previous year. Arrivals of nationals of all these countries have shown a decrease over this period except those of Yugoslavia and Greece. The largest reductions were of Turkish nationals (down 49 per cent) and Norwegians (down 18 per cent).

Arrivals from the United States

Arrivals of United States nationals in November fell by 4 per cent to 83 000 from 87 000 in November 1977. However, the total for the first 11 months of the year rose by 4 per cent to 1 713 000 from 1 642 000 over the same period of 1977.

Rest of the world

In November, arrivals of foreign nationals other than those of western Europe and north America totalled 87 000, an increase of 10 per cent on last year. For the first 11 months of the year there was an overall increase of 7 per cent to 1 294 000 from 1 208 000 over the corresponding period of 1977.

The upward trend in the arrivals of Asian nationals, excluding those from Japan, continued with an increase of 21 per cent in November compared with last year. Arrivals from those countries during the first 11 months of the year were also up by 21 per cent on the same period of 1977.

In November arrivals of Japanese nationals increased by 13 per cent compared with November 1977, and in the first 11 months of this year there was an overall increase of 2 per cent on the corresponding period of 1977.

Compared with last year, arrivals in November 1978 of east European nationals rose steeply by 86 per cent, although the actual figures involved were comparatively small. Those of Latin America increased by 14 per cent on November 1977. For the first 11 months of the year, arrivals from eastern Europe and Latin America rose by 10 per cent and 21 per cent respectively.

The recent fall in arrivals of nationals of Middle East countries continued in November with a decrease of 7 per cent. However, the overall total for the first 11 months of 1978 rose by 6 per cent compared with the same period of the previous year.

Inquiries: 01-215 5555.

Notes

1 The figures, collected by the Home Office, record the number of journeys made, so that a person who makes more than one journey is counted on each occasion. The figures for any particular country relate not to the place from which the passenger travelled, but to the fact that he or she was a foreign national admitted on the basis of holding a passport of that country.

2 Figures for the nationals of non-EEC countries include stateless persons, while an estimated addition has been made to the Home Office figures for the appreciable number of United States passengers arriving via the Irish Republic. All figures for non-EEC arrivals relate to visitors given leave to enter for less than 12 months, ie holidaymakers, business visitors, people coming to stay as guests of relatives or friends, other tourists, and those coming for permit-free employment for less than 12 months, and also include passengers given leave to enter for any period for the purpose of taking up a course of study. These categories comprise approximately 90 per cent of all arrivals. For EEC countries, all arrivals are shown, irrespective of the passengers' purpose of visit or expected length of stay. This follows the entry of the United Kingdom into the EEC, since when citizens of community countries are generally admitted to the United Kingdom without having to state their purpose of visit or expected length of stay.

3 Seasonally adjusted figures: simple comparisons of monthly figures between one year and another, or between adjacent months, must be interpreted with caution. The seasonally adjusted figures may provide a better basis for comparison with other months or for judging current trends. In estimating the seasonal adjustments, allowances have been made for changes in the seasonal pattern, which have been in the direction of a spreading of the tourist season, with some reduction in the summer peak relative to the rest of the year.

Adjustment was also made for the effect of the varying date of Easter on numbers of western European arrivals.

The seasonally adjusted series are liable to revision when subsequent figures become available and should therefore, for the most recent months, be viewed with caution.

Foreign arrivals

Thousands per month

	Total arrivals of nationals of EEC countries (excluding Irish Republic) [1]		Foreign arrivals from non-EEC countries [2]							
			Nationals of rest of western Europe (non-EEC)		Nationals of United States		Nationals of other foreign countries		Total nationals of non-EEC countries	
1970	199		47		117		41		205	
1971	214		53		129		46		228	
1972	232		59		134		51		244	
1973	265		70		131		62		263	
1974	280		75		107		68		250	
1975	314		87		99		80		267	
1976	379		113		121		89		322	
1977	438		133		144		107		383	
1977	UA	SA	UA	SA	UA	SA	UA	SA	UA	SA
January	224	423	84	144	60	142	66	100	217	385
February	260	499	89	146	56	138	61	103	206	387
March	355	423	113	139	85	136	85	106	283	381
April	495	456	149	141	123	144	79	103	352	388
May	490	447	125	141	181	152	94	107	400	400
June	489	439	157	131	231	154	128	112	516	397
July	927	457	270	135	245	141	202	111	717	387
August	569	433	155	125	212	141	181	110	548	376
September	410	419	128	121	196	134	135	105	459	360
October	395	438	131	128	158	163	99	106	387	399
November	278	430	101	123	87	136	79	114	266	373
December	266	394	90	118	83	144	74	105	246	367
1978										
January	212	402	77	131	74	152	70	106	221	389
February	217	416	73	119	60	146	68	113	201	378
March	405	431	116	126	102	163	83	104	302	393
April	444	451	115	123	127	148	84	109	326	380
May	483	438	103	116	200	168	100	114	404	398
June	462	430	153	120	243	162	139	122	535	404
July	917	448	242	121	271	155	215	117	728	393
August	667	432	133	113	218	144	190	114	541	371
September	424	432	116	110	193	132	146	113	456	355
October	387	424	124	122	141	145	111	119	375	386
November	265	407	102	124	83	130	87	124	272	375
Jan-Nov 77	4 992		1 503		1 642		1 208		4 352	
Jan-Nov 78	4 882		1 353		1 713		1 294		4 360	

[1] Total arrivals: all nationals of EEC countries admitted to the UK irrespective of intended length of stay or purpose (excluding Irish Republic). [2] Foreign arrivals (non-EEC): nationals of countries other than EEC or the Commonwealth admitted for less than one year for selected purposes – see note 2. UA = Unadjusted, Home Office. SA = Seasonally adjusted, Department of Trade.

Structure of company financing

This is the third of an annual series of articles on the sources and uses of funds of industrial and commercial (I and C) companies.[1] It complements the article on companies' rate of return on capital employed published in *Trade and Industry* 22 September 1978 (pages 675-9). The data on which this article is based are obtained from two sources – the national accounts (table 1 and chart 1) and the Department of Industry (DoI) analysis of large companies' accounts as published in Business Monitor MA3, Company Finance (tables 2, 3 and 4 and charts 2, 3 and 4)[2]. The tenth issue of the Business Monitor is due to be published shortly. A detailed description of the sources is given later in this article.

The total sources and uses of funds of I and C companies in aggregate (table 1) increased by just over 10 per cent in 1977 following a sharp rise in 1976. On the sources side, internal funds and bank borrowing increased while cash proceeds from the issue of shares and loans fell, for the second year in succession. On the uses side, gross domestic fixed capital formation rose appreciably but total working capital only moderately. The largest item within working capital, expenditure on stocks, remained unchanged at a high level while bank deposits and other liquid assets increased by more than half to an historically high level. However, the large and negative unidentified item, which reflects errors in the compilation of many of these series, needs to be borne in mind in interpreting the figures. Though entered on the uses of funds side of the table for consistency, the unidentified item incorporates errors on both sides.

The experience of the large listed companies, based on the incomplete figures for 1977 given in table 2, was somewhat different. Total sources and uses of funds fell by nearly 10 per cent following an increase of nearly 75 per cent in 1976. Internal funds fell only slightly, bank borrowing and cash from the issue of ordinary shares more appreciably, though preference and long-term loans increased as a source. Among the uses, expenditure on tangible fixed assets increased in line with the figures in table 1 but total working capital fell by nearly a third, mainly due to reduced expenditure on stocks.

Comparisons between the figures in table 1 and those in table 2 should not be carried too far however because they are obtained from quite separate sources and are compiled on the basis of different definitions and conventions; in particular the data in table 2 are based on the sum of figures for companies with accounting years ending over a 12-month period (from April to March) and, hence, the timing of changes may be different from that in table 1 (see the section on sources of data later). While some comparisons and deductions are made in this article it would be inappropriate, for example, to attempt to deduce the financial experience of small companies by comparing the figures in tables 1 and 3.

[1] The originating article was published in *Economic Trends* September 1975, a shortened version of which appeared in *Trade and Industry* 10 October 1975 page 110. [2] Available from government bookshops or by standing order from HMSO, PO Box 569, London SE1 9NH, price £2.

Sources of funds

The most important source of company finance is internal funds. These funds, for both sets of data, are defined as trading income and other revenue income gross of depreciation and stock appreciation, *plus* capital receipts *less* tax, dividend and interest payments. The importance of internal funds, thus defined, can be seen from the upper part of charts 1 to 4 below. It is also clear that the proportion of internal funds to total funds tends to fluctuate according to the position in the economic cycle, being high at the peak of the profits cycle and low in the trough. This definition of internal funds is before deducting stock appreciation and depreciation at current replacement costs – that is before deducting

Internal funds as a proportion of total funds – national accounts data per cent

	Before deducting stock appreciation and depreciation at current replacement costs	After deducting stock appreciation and depreciation at current replacement costs from internal and total funds
1964	68	55
1965	71	56
1966	74	54
1967	76	58
1968	73	55
1969	74	57
1970	69	45
1971	76	56
1972	58	36
1973	55	26
1974	60	−23
1975	78	−42
1976	73	9
1977	75	30

Table 1 Sources and uses of funds of all industrial and commercial companies £ million

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Sources of funds											
Gross income [1] [2]	6 517	7 559	8 423	9 025	10 061	11 498	15 192	18 683	18 095	22 847	25 000
Less unremitted profits of overseas subsidiaries [3]	−174	−260	−299	−296	−289	−395	−761	−791	−846	−1 340	−1 149
Gross income net of unremitted profits overseas	6 343	7 299	8 124	8 729	9 772	11 103	14 431	17 892	17 249	21 507	23 851
Capital transfers	236	454	598	525	594	410	373	363	443	401	311
Taxation payments including tax on dividends [4]	−2 104	−2 262	−2 523	−2 964	−3 090	−3 310	−3 778	−6 047	−4 731	−5 019	−5 695
Dividend payments on ordinary shares net of income tax [5]	−860	−842	−913	−810	−930	−933	−1 396	−1 469	−1 608	−1 825	−2 233
Interest payments and other dividends [5]	−866	−995	−1 147	−1 235	−1 253	−1 443	−2 320	−3 303	−3 272	−3 761	−3 654
Profits due abroad net of unremitted profits held in the United Kingdom [6]	−111	−139	−129	−174	−169	−228	−297	−265	−223	−540	−438
Transfers to public corporations and charities	−33	−53	−46	−55	−56	−51	−51	−55	−59	−65	−75
Total internal funds	2 605	3 462	3 964	4 016	4 868	5 548	6 962	7 116	7 799	10 698	12 067
Bank borrowing	333	569	664	1 126	732	2 988	4 504	4 411	438	2 388	2 923
Proceeds of issues of ordinary shares in the UK for cash	65	303	210	83	231	334	143	126	1 064	838	734
Issues of preference shares and debentures for cash and other loans and mortgages [7]	438	430	539	566	551	665	1 158	270	740	668	376
Total external funds	836	1 302	1 413	1 775	1 514	3 987	5 805	4 807	2 242	3 894	4 033
Total sources of funds	3 441	4 764	5 377	5 791	6 382	9 535	12 767	11 923	10 041	14 592	16 100
Uses of funds											
Gross domestic fixed capital formation	2 362	2 614	2 987	3 350	3 468	3 898	4 879	6 054	7 078	8 094	9 523
Cash acquisitions of subsidiaries and trade investments	376	381	338	432	500	961	1 420	678	531	882	1 077
Working capital:											
Stocks [1]	352	816	970	1 351	874	970	3 814	6 100	2 028	5 037	5 042
Bank deposits and other liquid assets [8]	462	406	−207	193	1 207	2 387	2 652	141	1 816	1 890	2 907
Intra-company investment [9]											
by UK companies overseas net of unremitted profits held abroad	148	146	222	163	269	38	563	530	1	304	368
by overseas companies net of unremitted profits held in the UK	−221	−206	−250	−452	−428	−82	−634	−1 347	−1 165	−1 290	−1 201
Import deposits [10]	–	75	403	−225	−253	–	–	–	–	–	–
Identified trade credit extended less trade credit received [11]	90	−115	−445	256	202	−92	−15	259	−45	425	−105
Increase in tax balances [12]	−222	−72	−57	−69	−27	−27	−592	−391	−631	−225	−246
Total working capital	609	1 050	636	1 217	1 844	3 248	5 788	5 292	2 004	6 141	6 765
Other identified assets	28	244	521	−105	−219	90	389	−165	759	608	914
Unidentified [13]	66	475	895	897	789	1 338	291	64	−331	−1 133	−2 179
Total uses of funds	3 441	4 764	5 377	5 791	6 382	9 535	12 767	11 923	10 041	14 592	16 100
[1] Including stock appreciation of	149	470	591	838	888	1 036	2 327	4 790	4 239	5 091	4 046

the charges necessary to maintain the physical assets of the company. If, however, these charges were deducted so as to show the internal funds available to finance only growth in the quantity or volume of fixed assets and stocks, and any increase in other working capital and investment, then the contribution of internal funds would be lower, as shown in the table in the previous column.

Internal funds on the first definition, increased slightly as a proportion of total funds in 1977 though not quite to the 1975 level, as can be seen from the table above (first column) and tables and charts 1 and 2. While the total value of internal funds for all I and C companies rose because the rise in gross income was only partly offset by increases in taxation and dividend payments (table 1), the internal funds of large listed companies whose activities are mainly in the I and C sector (table 2) are, provisionally, shown to have decreased with substantial increases in taxation (particularly), dividend payments and a fall in other capital receipts, exceeding the rise in gross income. The substantial discrepancy between the increases in taxation payments shown in tables 1 and 2 can largely be explained by the inclusion of the oil companies in table 1 and their exclusion from table 2. In particular, for I and C companies in aggregate (table 1) taxes paid abroad on income arising abroad fell moderately in 1977.

Bank borrowing in 1977 for these companies, though higher than in 1976, was still well below the very high levels of 1973 and 1974 but about the same as the high level of 1972. As a proportion of total sources, bank borrowing in 1977 was only about half the amount in 1972, 1973 or 1974 but higher than the average for the other years (table 1 and chart 1). Proceeds from issuing ordinary shares for cash fell further in 1977 though

Chart 1 **All industrial and commercial companies**

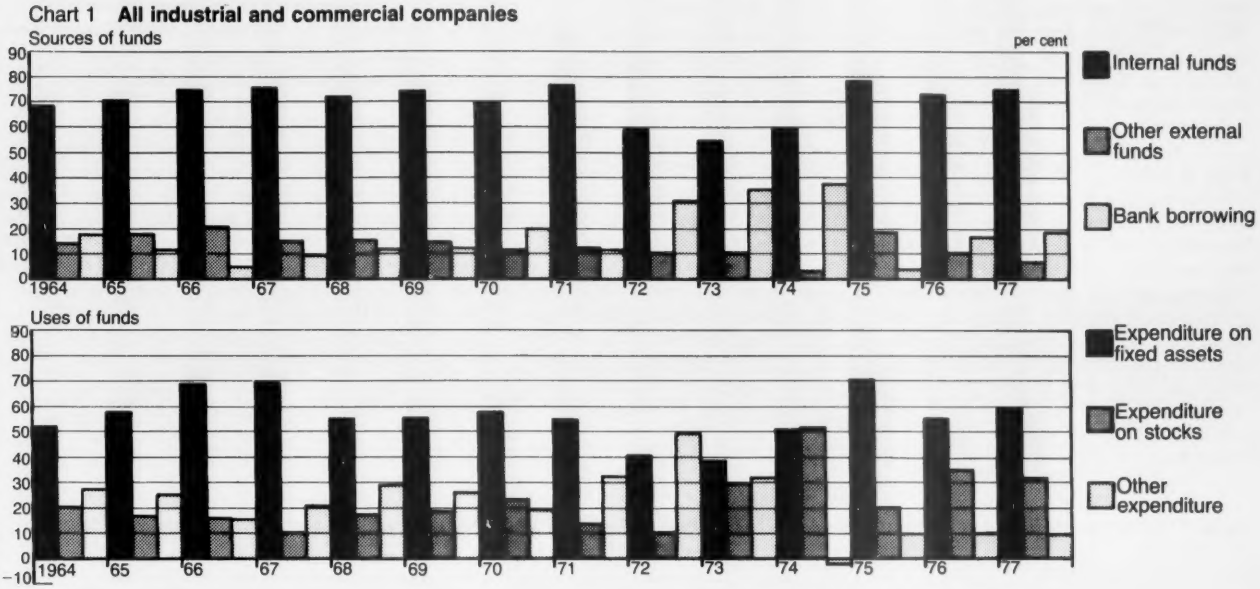

Table 1 *(continued)*

per cent

1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
189.4	158.7	156.6	155.8	157.6	120.6	119.0	156.7	180.2	156.6	155.3
−5.1	−5.5	−5.6	−5.1	−4.5	−4.1	−6.0	−6.6	−8.4	−9.2	−7.1
184.3	153.2	151.1	150.7	153.1	116.4	113.0	150.1	171.8	147.4	148.2
6.9	9.5	11.1	9.1	9.3	4.3	2.9	3.0	4.4	2.7	1.9
−61.1	−47.5	−46.9	−51.2	−48.4	−34.7	−29.6	−50.7	−47.1	−34.4	−35.4
−25.0	−17.7	−17.0	−14.0	−14.6	−9.8	−10.9	−12.3	−16.0	−12.5	−13.9
−25.2	−20.9	−21.3	−21.3	−19.6	−15.1	−18.2	−27.7	−32.6	−25.8	−22.7
−3.2	−2.9	−2.4	−3.0	−2.6	−2.4	−2.3	−2.2	−2.2	−3.7	−2.7
−1.0	−1.1	−0.9	−0.9	−0.9	−0.5	−0.4	−0.5	−0.6	−0.4	−0.5
75.7	72.7	73.7	69.3	76.3	58.2	54.5	59.7	77.7	73.3	74.9
9.7	11.9	12.3	19.4	11.5	31.3	35.3	37.0	4.3	16.4	18.2
1.9	6.4	3.9	1.4	3.6	3.5	1.1	1.0	10.6	5.7	4.6
12.7	9.0	10.0	9.8	8.6	7.0	9.1	2.3	7.4	4.6	2.3
24.3	27.3	26.3	30.7	23.7	41.8	45.5	40.3	22.3	26.7	25.1
100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
68.6	54.9	55.6	57.8	54.3	40.9	38.2	50.8	70.5	55.5	59.1
10.9	8.0	6.3	7.5	7.8	10.1	11.1	5.7	5.3	6.0	6.7
10.2	17.1	18.0	23.3	13.7	10.2	29.9	51.2	20.2	34.5	31.3
13.4	8.5	−3.8	3.3	18.9	25.0	20.8	1.2	18.1	12.9	18.1
4.3	3.1	4.1	2.8	4.2	0.4	4.4	4.4	–	2.1	2.3
−6.4	−4.3	−4.6	−7.8	−6.7	−0.9	−5.0	−11.3	−11.6	−8.8	−7.5
–	1.6	7.5	−3.9	−4.0	–	–	–	–	–	–
2.6	−2.4	−8.3	4.4	3.2	−1.0	−0.1	2.2	−0.4	2.9	−0.7
−6.5	−1.5	−1.1	−1.2	−0.4	0.3	−4.6	−3.3	−6.3	−1.5	−1.5
17.7	22.0	11.8	21.0	28.9	34.1	45.4	44.4	20.0	42.1	42.0
0.8	5.1	9.7	−1.8	−3.4	0.9	3.0	−1.4	7.5	4.2	5.7
1.9	10.0	16.6	15.5	12.4	14.0	2.3	0.5	−3.3	−7.8	−13.5
100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
4.3	9.9	11.0	14.5	13.9	10.9	18.2	40.2	42.2	34.9	25.1

Notes to table 1

[2] Gross income is income arising in United Kingdom before depreciation plus income from abroad after deducting depreciation (including unremitted profits of overseas subsidiaries) but before deducting taxes paid abroad.

[3] Profits of overseas subsidiaries of UK companies retained abroad. Separate figures for industrial and commercial companies have only been collected since 1968; earlier figures are estimates based on the movement in total company sector unremitted profits held abroad.

[4] Consists of UK taxes on income plus taxes on capital plus taxes paid abroad less additions to tax reserves, plus income tax payable on UK dividends. The taxes paid abroad include both taxes on unremitted profits retained abroad and on dividends remitted to the UK.

[5] Net of income tax in all years on dividends.

[6] Represents dividends, interests, etc, paid to parent company overseas. The unremitted profits are the profits of UK subsidiaries of overseas companies retained in the UK. Separate figures of unremitted profits for industrial and commercial companies have only been collected since 1968; earlier figures are estimated based on the movement in total company sector unremitted profits held in the UK.

[7] Including other capital issues overseas.

[8] Including British government securities and local authority loans and mortgages.

[9] Intra-company investment by UK parent companies does not appear in company accounts. Such investment by UK subsidiaries of overseas parents is distinguished; short-term loans and credit received and advanced are included under creditors and debtors respectively and long-term loans from overseas parents are included with long-term loans issued for cash in the DI analysis.

[10] Included in debtors in DoI analysis.

[11] Included in debtors and creditors in DoI analysis.

[12] Income tax, value added tax, car tax, national insurance contributions and, in earlier years, purchase tax and selective employment tax collected by companies and not yet paid to the revenue departments.

[13] Including unidentified debtors and creditors, expenditure on intangible assets and investments in company securities other than from acquisitions of subsidiaries and trade investments, as well as errors and any other omissions.

Sources: *Financial Statistics January 1979 and National Income and Expenditure 1967-77.*

industrial share prices rose during the year and on average were well up on the average for 1976. Issues of preference shares and debentures for cash and other loans and mortgages were well down on their 1975 and 1976 levels, approaching the very depressed level of 1974. As in 1974, there were net redemptions of debentures in 1977. External funds in total were a quarter of total sources for I and C companies in aggregate, a little below the average for 1967-71 (table 1 and chart 1).

For the large listed companies (table 2 and chart 2) bank borrowing and the value of ordinary shares issued for cash in 1977 both fell in absolute terms and as proportions while preference shares and long-term loans rose as a source of funds. External funds in total accounted for a lower proportion of total sources than in any year since 1964 (the first year of the present series) except for 1972 and 1975.

Uses of funds

The main use of funds is for the purchase of fixed assets as can be seen from the charts. Expenditure on fixed assets is cyclical and tends to continue to rise rapidly in the year following the peak of the cyclical increase in profits and then to fall, or rise less rapidly, until the next profits peak. This has certainly been the pattern over recent years with a noticeable slowdown in the pace of fixed investment in 1975 and 1976 though it improved slightly in 1977. Net domestic fixed capital formation, that is gross domestic fixed capital formation *less* capital consumption at current replacement cost, also increased in 1977 for I and C companies as a whole. Investment by I and C companies in North Sea oil exploration and production, at nearly £2 billion in 1977, was about the same as in 1976. Most of the companies involved in the North Sea are excluded from the DoI analysis and, hence, from the figures in tables 2, 3 and 4 because of their extensive overseas activities or because they have been predominantly engaged in exploration activities. This partly explains the slightly different pattern of changes in expenditure on fixed assets from year-to-year by large listed companies (table 2), or large listed and unlisted companies (table 3), compared to all industrial and commercial companies (table 1).

Though expenditure on fixed assets is of a similar order of magnitude to, but generally less than, internal funds it is not necessarily financed wholly by internal funds which may be required for other purposes. Since internal funds are so important a source of funds their size must, however, affect the expenditure on fixed assets. Also, in times of financial squeeze, internal funds are depressed and companies tend to react by cutting back fixed investment. In addition, the availability of internal funds is a reflection of profitability and the decision to invest is affected by the assessment of future profitability. The revival of fixed investment in 1977 may have been due in part to the large rise in funds available internally in 1976 and, to a lesser extent, in 1977 though 'real' profitability on past investment had improved only slightly.

The expenditures on fixed assets shown in the tables in this article do not cover assets which have been leased. The lessors, in general, are classed as financial companies and as such are outside the scope of these tables. Lessees, on the other hand, do not include such assets in their balance sheets since it is the owner of the assets rather than the user that accounts for them. The user has, of course, to pay a charge which lowers the level of gross income and, hence, of internal funds. The Accounting Standards Committee is currently formulating exposure drafts (drafts for discussion of prospective accounting standards) on the subject of accounting for leasing, by both lessees and lessors which are likely to require that users, ie lessees, should give detailed information on leased assets in future. Similarly, in national accounts statistics – as given in table 1 – assets are classed on the basis of ownership rather than use. The latest in an annual series of articles on leasing[3] indicates that I and C companies leased, hired or rented assets valued at something of the order of £0.5 billion to £1 billion in 1977, around 5 to 10 per cent of their gross domestic fixed capital formation.

The other important use of funds is to finance stocks. The increases in stocks (including stock appreciation) have been particularly large in recent years reflecting, mainly, sub-

[3] 'Estimates of investment in assets for leasing, hiring and renting out' published in *Trade and industry*, 29 September 1978.

Table 2 Sources and uses of funds of large listed companies in manufacturing, distribution and certain other services [1]

£ million

	1972	1972	1973	1973	1974	1974	1975	1975	1976
Number of companies [2]	1 168	1 158	1 116	1 097	1 084	1 057	1 044	1 028	1 007
Sources of funds									
Net trading income [3], [4]	3 937	3 919	4 926	4 911	4 939	4 968	5 121	5 080	7 239
Other income	343	340	509	505	614	637	604	604	832
Depreciation [5]	1 427	1 419	1 635	1 625	1 819	1 841	2 093	2 086	2 414
Gross income	5 707	5 678	7 070	7 041	7 372	7 446	7 818	7 770	10 485
Other capital receipts	232	229	256	254	151	148	195	196	404
Taxation payments [6]	−1 261	−1 257	−1 453	−1 456	−1 672	−1 680	−1 500	−1 496	−1 535
Dividend payments (net of tax) [6]	−491	−488	−870	−865	−981	−991	−946	−941	−1 136
Interest on long-term loans	−395	−394	−480	−479	−525	−543	−576	−577	−638
Other expenditure on capital account [7]	−140	−139	−101	−130	−171	−181	−217	−218	−214
Total internal funds	3 652	3 629	4 422	4 365	4 174	4 199	4 774	4 735	7 366
Bank borrowing	315	300	1 335	1 305	1 760	1 780	−93	−83	1 228
Ordinary shares issued for cash [8]	173	173	36	34	77	95	725	719	861
Preference and long-term loans [8]	268	267	529	521	94	45	319	320	405
Total external funds	756	740	1 900	1 860	1 931	1 920	951	956	2 494
Total sources of funds	4 408	4 369	6 322	6 225	6 105	6 119	5 725	5 691	9 860
Uses of funds									
Tangible fixed assets	2 152	2 124	2 956	2 869	3 444	3 537	3 582	3 577	4 169
Acquisition of subsidiaries	1 657	1 653	1 108	1 103	542	538	385	386	528
Less shares and loans issued in exchange	−1 180	−1 180	−597	−595	−139	−130	−85	−85	−142
Cash cost of acquisitions	477	473	511	509	403	408	300	301	386
Working capital									
Stocks [9]	763	754	2 694	2 645	3 685	3 846	1 620	1 620	3 732
Liquid assets [9]	846	847	555	550	−416	−419	912	921	1 300
Debtors [10]	1 112	1 109	2 480	2 411	1 715	1 690	1 217	1 202	3 178
Creditors [10]	−1 198	−1 198	−3 189	−3 107	−2 919	−2 945	−2 148	−2 174	−3 593
Debtors less creditors [10]	−86	−89	−709	−694	−1 204	−1 255	−931	−972	−415
Total working capital	1 523	1 512	2 540	2 500	2 065	2 172	1 601	1 570	4 617
Other expenditure									
Investments	341	340	422	424	108	86	270	271	676
Intangible assets [11]	16	16	51	50	21	24	22	23	15
Consolidation adjustment	−101	−96	−158	−127	64	−108	−50	−51	−3
Total uses of funds	4 408	4 369	6 322	6 225	6 105	6 119	5 725	5 691	9 860

stantial rises in raw material prices and inflation generally as well as considerable stock building in 1973 and, to a lesser extent, in 1974. The figures in table 1 show that, in 1977, I and C companies in aggregate increased their holdings of stocks. The value of the increase was much the same as in 1976 but stock appreciation fell by £1 billion to £4 billion (a lower figure than in any of the previous three years but still high by pre-1974 levels) so that the physical increase was greater than in 1976. Stock appreciation, that is the additional amount of money needed due to higher prices to maintain the same volume of stocks, has, since 1966, generally accounted for well over half the expenditure on stocks. The proportion fluctuates considerably from year to year. In recent years stock building has been affected by the much higher levels of stock appreciation. Funds needed to finance stocks reached a peak in 1974 when they even exceeded the funds used for expenditure on fixed assets. Expenditure on stocks as a proportion of expenditure on fixed assets at just over 50 per cent in 1977 was a little lower than in 1976 but still well above the pre-1973 levels of about 30 per cent. As a proportion of total uses of funds,

Chart 2 **Large listed companies in manufacturing, distribution and certain other services**

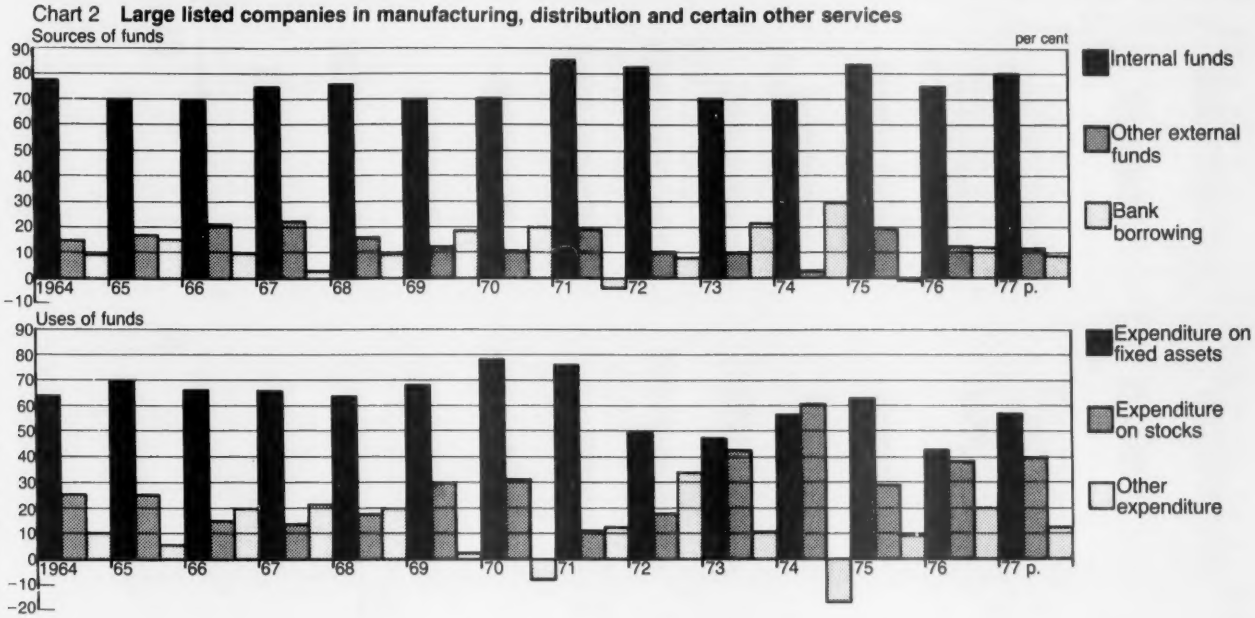

Table 2 *(continued)*

Provisional		Per cent total sources/uses					Provisional	
1976	1977	1972	1973	1974	1975	1976	1977	
750	729	1 168	1 116	1 084	1 044	1 007	729	Number of companies [2]
								Sources of funds
6 170	6 671	89.3	77.9	80.9	89.4	73.4	87.1	Net trading income [3, 4]
744	902	7.8	8.1	10.1	10.6	8.4	11.8	Other income
2 090	2 303	32.4	25.9	29.8	36.6	24.5	30.1	Depreciation [5]
9 004	9 876	129.5	111.9	120.8	136.6	106.3	129.0	Gross income
345	187	5.3	4.0	2.5	3.4	4.1	2.5	Other capital receipts
−1 286	−1 912	−28.6	−23.0	−27.4	−26.2	−15.5	−25.0	Taxation payments [6]
−999	−1 164	−11.1	−13.8	−16.1	−16.5	−11.5	−15.2	Dividend payments (net of tax) [6]
−543	−587	−9.0	−7.6	−8.6	−10.0	−6.5	−7.7	Interest on long-term loans
−154	−252	−3.2	−1.6	−2.8	−3.8	−2.2	−3.3	Other expenditure on capital account [7]
6 367	6 148	82.8	69.9	68.4	83.4	74.7	80.3	**Total internal funds**
860	594	7.1	21.1	28.8	−1.6	12.5	7.8	Bank borrowing
795	482	3.9	0.6	1.3	12.7	8.7	6.3	Ordinary shares issued for cash [8]
316	433	6.1	8.4	1.5	5.5	4.1	5.6	Preference and long-term loans [9]
1 971	1 509	17.2	30.1	31.6	16.6	25.3	19.7	**Total external funds**
8 338	7 656	100.0	100.0	100.0	100.0	100.0	100.0	**Total sources of funds**
								Uses of funds
3 524	4 340	48.8	46.8	56.4	62.6	42.3	56.7	**Tangible fixed assets**
421	502	37.6	17.5	8.9	6.7	5.3	6.6	Acquisition of subsidiaries
−107	−237	−26.8	−9.4	−2.3	−1.5	−1.4	−3.1	*Less* shares and loans issued in exchange
314	265	10.8	8.1	6.6	5.2	3.9	3.5	**Cash cost of acquisitions**
								Working capital
3 146	2 366	17.3	42.6	60.4	28.3	37.8	30.9	Stocks [3]
1 162	754	19.2	8.8	−6.8	15.9	13.2	9.8	Liquid assets [9]
2 705	1 585	25.2	39.2	28.1	21.3	32.2	20.7	Debtors [10]
−3 065	−1 955	−27.2	−50.4	−47.8	−37.5	−36.4	−25.5	Creditors [10]
−360	−370	−2.0	−11.2	−19.7	−16.2	−4.2	−4.8	Debtors less creditors [10]
3 948	2 750	34.5	40.2	33.8	28.0	46.8	35.9	**Total working capital**
								Other expenditure
567	254	7.7	6.7	1.8	4.7	6.9	3.3	Investments
15	41	0.4	0.8	0.3	0.4	0.1	0.5	Intangible assets [11]
−30	5	−2.3	−2.5	1.0	−0.9	0.0	0.1	Consolidation adjustment
8 338	7 656	100.0	100.0	100.0	100.0	100.0	100.0	**Total uses of funds**

expenditure on stocks fell a little but, at just under a third, was a good deal higher than in most years though well below the exceptionally high proportion in 1974.

In previous articles stock appreciation estimates have been provided for the groupings of listed and unlisted companies covered by tables 2, 3 and 4 but this has not been possible in the current article. The national accounts stocks figures have recently been rebased and are still subject to revision; in the circumstances it is felt that it would be inappropriate to publish estimates at this time and readers should not interpret the estimates given at the foot of table 1 too precisely.

Large listed companies reduced their expenditure on stocks in 1977 both in absolute terms and as a proportion of total uses. The differences in pattern of expenditure on stocks shown for all I and C companies (table 1) and large listed companies (table 2) is largely accounted for by timing differences ie differences between the accounting periods of the large listed companies and the calendar year figures for all I and C companies.

Debtors and creditors can be a source or a use of funds depending on the net position.

Chart 3 **Large listed and unlisted companies in manufacturing, distribution and certain other services**

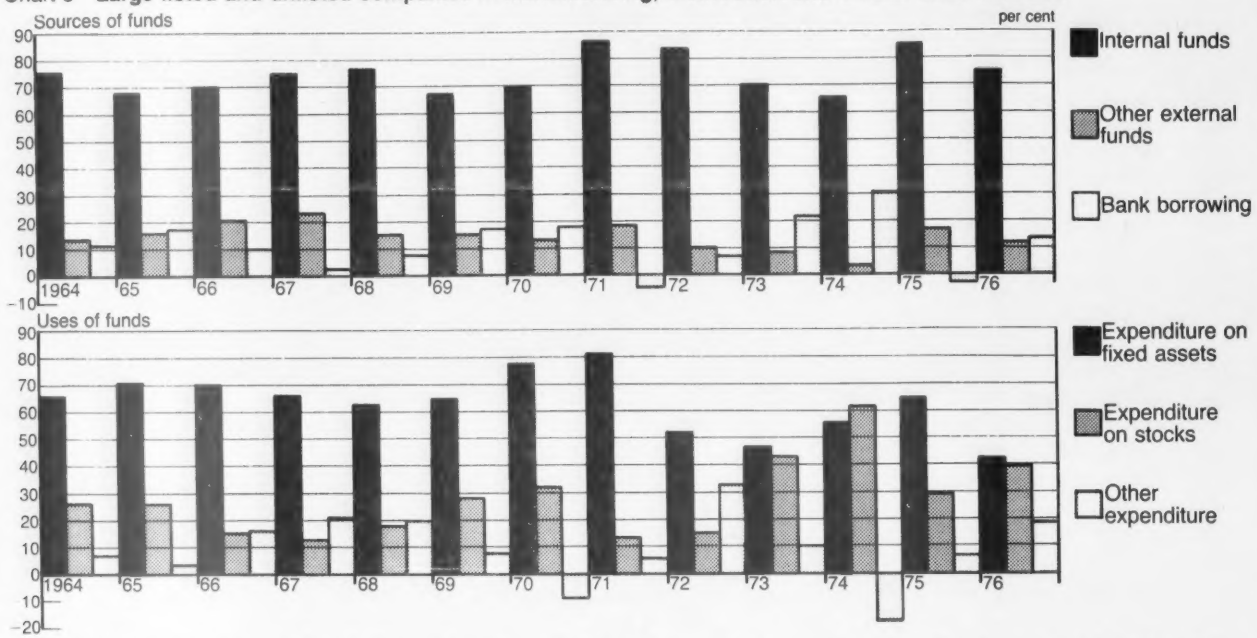

Table 3 **Sources and use of funds of large listed and unlisted companies in manufacturing, distribution and certain other services** [1]

	£ million									Per cent total sources/uses				
	1972	1972	1973	1973	1974	1974	1975	1975	1976	1972	1973	1974	1975	1976
Number of companies [2]	1 754	1 734	1 691	1 664	1 649	1 526	1 513	1 500	1 479	1 754	1 691	1 649	1 513	1 479
Sources of funds														
Net trading income [3, 4]	4 630	4 612	5 843	5 822	5 760	5 773	5 915	5 886	8 392	87.1	77.1	76.3	87.8	72.4
Other income	385	383	568	559	692	695	672	669	933	7.2	7.5	9.2	10.0	8.1
Depreciation [5]	1 763	1 754	2 004	1 992	2 225	2 223	2 538	2 512	2 896	33.2	26.5	29.5	37.7	25.0
Gross income	6 778	6 749	8 415	8 373	8 677	8 691	9 125	9 067	12 221	127.6	111.1	115.0	135.5	105.5
Other capital receipts	291	288	315	312	197	187	253	255	451	5.5	4.2	2.6	3.7	3.9
Taxation payments [6]	−1 496	−1 490	−1 706	−1 706	−1 952	−1 940	−1 734	−1 732	−1 738	−28.1	−22.5	−25.9	−25.8	−15.0
Dividend payments (net of tax) [6]	−563	−560	−1 074	−1 068	−1 193	−1 194	−1 067	−1 061	−1 323	−10.6	−14.2	−15.8	−15.8	−11.4
Interest on long-term loans	−438	−437	−531	−530	−578	−590	−643	−644	−709	−8.2	−7.0	−7.7	−9.5	−6.1
Other expenditure on capital account [7]	−154	−153	−113	−141	−179	−187	−224	−225	−221	−2.9	−1.5	−2.4	−3.3	−1.9
Total internal funds	4 418	4 398	5 305	5 239	4 972	4 967	5 710	5 660	8 681	83.1	70.0	65.9	84.8	75.0
Bank borrowing	370	355	1 605	1 565	2 318	2 290	−172	−163	1 523	6.9	21.2	30.7	−2.6	13.1
Ordinary shares issued for cash [8]	205	203	82	80	123	129	761	755	903	3.9	1.1	1.6	11.3	7.8
Preference and long-term loans [8]	321	320	581	576	133	96	437	436	479	6.0	7.7	1.8	6.5	4.1
Total external funds	896	878	2 268	2 221	2 574	2 515	1 026	1 028	2 905	16.9	30.0	34.1	15.2	25.0
Total sources of funds	5 314	5 276	7 574	7 461	7 546	7 482	6 736	6 688	11 586	100.0	100.0	100.0	100.0	100.0
Uses of funds														
Tangible fixed assets	2 747	2 716	3 541	3 447	4 192	4 219	4 315	4 291	4 918	51.7	46.8	55.5	64.1	42.5
Acquisition of subsidiaries	1 675	1 671	1 125	1 120	589	585	417	418	549	31.5	14.9	7.8	6.2	4.7
Less shares and loans issued in exchange	−1 183	−1 183	−608	−606	−144	−133	−99	−99	−147	−22.2	−8.0	−1.9	−1.5	−1.2
Cash cost of acquisitions	493	489	517	514	444	452	318	319	402	9.3	6.8	5.9	4.7	3.5
Working capital														
Stocks [4]	823	815	3 264	3 215	4 665	4 798	1 948	1 958	4 543	15.5	43.1	61.8	28.9	39.2
Liquid assets [9]	935	936	652	647	−453	−444	964	967	1 465	17.6	8.6	−6.0	14.3	12.6
Debtors [10]	1 335	1 334	3 056	2 979	2 334	2 313	1 448	1 415	4 059	25.1	40.3	30.9	21.5	35.0
Creditors [10]	−1 296	−1 297	−3 815	−3 731	−3 817	−3 842	−2 540	−2 546	−4 541	−24.4	−50.4	−50.6	−37.7	−39.1
Debtors less creditors [10]	39	37	−759	−752	−1 483	−1 529	−1 092	−1 131	−482	0.7	−10.0	−19.7	−16.2	−4.1
Total working capital	1 796	1 787	3 157	3 110	2 729	2 825	1 820	1 794	5 526	33.8	41.7	36.2	27.0	47.7
Other expenditure														
Investments	362	363	470	472	102	75	283	285	722	6.8	6.2	1.4	4.2	6.2
Intangible assets [11]	23	23	53	53	24	27	23	26	14	0.4	0.7	0.3	0.3	0.1
Consolidation adjustment	−107	−102	−165	−134	55	−116	−23	−27	5	−2.0	−2.2	0.7	−0.3	–
Total uses of funds	5 314	5 276	7 574	7 461	7 546	7 482	6 736	6 688	11 586	100.0	100.0	100.0	100.0	100.0

Complete figures are not available in the national accounts series but trade credit extended and received which can be identified – including export and import credit – is now shown, net, as part of working capital for I and C companies in table 1. Previously only the net export less import credit position was shown, other identified trade credit being included in the 'other identified assets' item. Another newly identified item in table 1, again as part of working capital, is 'increase in tax balances'. This was also previously included in 'other identified assets'. In the new presentation of sources and uses of funds in *Financial Statistics* (table 9.2) increase in tax balances is shown as a source of funds since, for each year as a whole, it is normally a positive item, ie it increases the funds available.[4]

The different presentation in table 1 of this article ie showing the item as a (generally) negative use as part of working capital, has been adopted for two reasons – first, in order to be consistent with the presentation in tables 2, 3 and 4 where increased tax balances are

[4] 'Financial balances of industrial and commercial companies' by C. W. Pettigrew in *Economic Trends*, 302, December 1978 page 110 – for a discussion of the alternative presentations, data problems and difficulties of presentation.

Chart 4 **Large listed and unlisted companies in manufacturing**

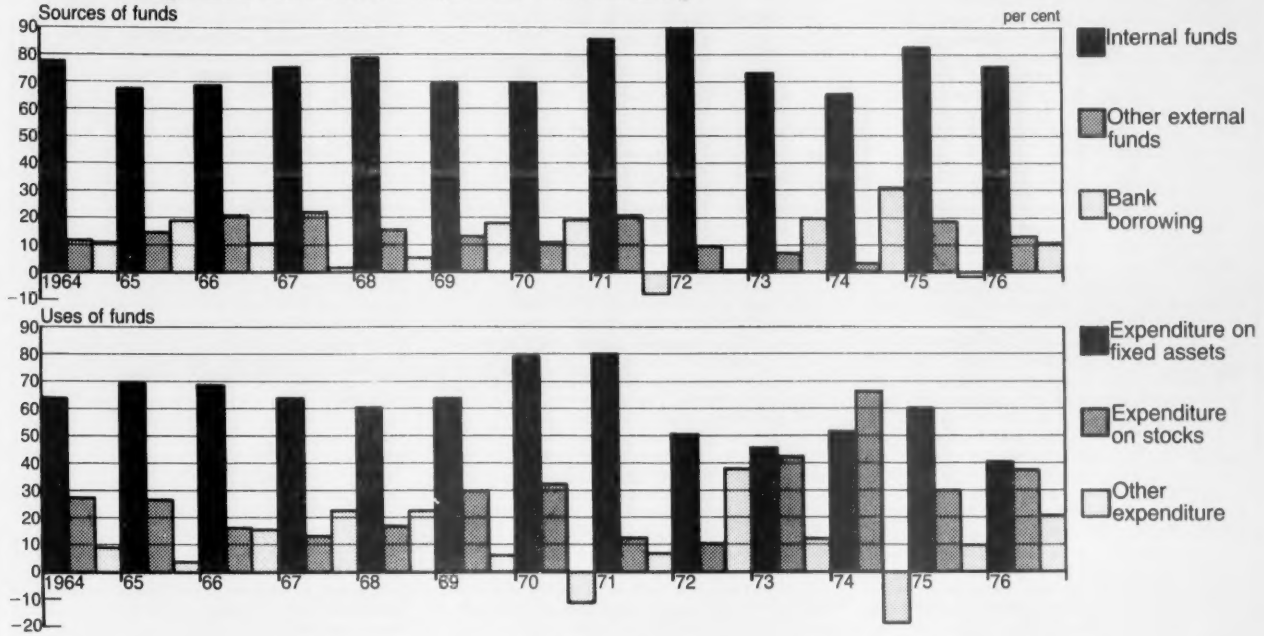

Table 4 **Sources and uses of funds of large listed and unlisted companies in manufacturing industries** [1]

	£ million									Per cent total sources/uses				
	1972	1972	1973	1973	1974	1974	1975	1975	1976	1972	1973	1974	1975	1976
Number of companies [2]	1 211	1 199	1 178	1 168	1 157	1 033	1 023	1 011	1 000	1 211	1 178	1 157	1 023	1 000
Sources of funds														
Net trading income [3, 4]	3 316	3 299	4 272	4 271	4 367	4 401	4 410	4 364	6 525	92.0	77.6	74.2	83.4	71.8
Other income	282	282	431	427	531	546	529	528	743	7.8	7.8	9.0	10.0	8.2
Depreciation [5]	1 387	1 379	1 577	1 554	1 715	1 718	1 955	1 951	2 233	38.5	28.3	29.1	37.0	24.6
Gross income	4 984	4 960	6 260	6 252	6 613	6 665	6 894	6 843	9 501	138.3	113.7	112.4	130.4	104.6
Other capital receipts	217	214	258	256	157	153	199	201	400	6.0	4.7	2.7	3.8	4.4
Taxation payments [6]	−1 102	−1 097	−1 234	−1 236	−1 430	−1 431	−1 297	−1 292	−1 300	−30.6	−22.4	−24.3	−24.5	−14.3
Dividend payments (net of tax) [6]	−412	−408	−774	−774	−910	−928	−791	−785	−1 001	−11.4	−14.1	−15.5	−15.0	−11.0
Interest on long-term loans	−334	−333	−408	−408	−431	−437	−491	−491	−551	−9.3	−7.4	−7.3	−9.3	−6.1
Other expenditure on capital account [7]	−128	−127	− 83	−113	−144	−145	−154	−155	−175	−3.5	−1.5	−2.4	−2.9	−1.9
Total internal funds	3 226	3 208	4 018	3 977	3 855	3 887	4 360	4 322	6 874	89.5	73.0	65.5	82.5	75.7
Bank borrowing	25	12	1 087	1 076	1 831	1 841	−51	−51	1 016	0.7	19.7	31.1	−1.0	11.2
Ordinary shares issued for cash [8]	144	142	65	65	83	81	601	595	791	4.0	1.2	1.4	11.4	8.7
Preference and long-term loans [8]	209	211	337	337	116	79	376	371	404	5.8	6.1	2.0	7.1	4.4
Total external funds	378	365	1 489	1 478	2 030	2 001	926	916	2 211	10.5	27.0	34.5	17.5	24.3
Total sources of funds	3 604	3 573	5 507	5 455	5 885	5 888	5 286	5 238	9 085	100.0	100.0	100.0	100.0	100.0
Uses of funds														
Tangible fixed assets	1 827	1 806	2 501	2 434	3 044	3 066	3 184	3 173	3 726	50.7	45.4	51.7	60.2	41.0
Acquisition of subsidiaries	924	921	686	688	416	445	347	348	362	25.6	12.5	7.1	6.6	4.0
Less shares and loans issued in exchange	−606	−606	−343	−342	−85	−113	−84	−84	−103	−16.8	−6.2	−1.4	−1.6	−1.1
Cash cost of acquisitions	318	315	342	346	331	332	263	264	259	8.8	6.2	5.6	5.0	2.9
Working capital														
Stocks [9]	418	409	2 326	2 324	3 909	3 975	1 585	1 581	3 419	11.6	42.2	66.4	30.0	37.6
Liquid assets [9]	708	708	576	576	−498	−543	757	756	1 259	19.6	10.5	−8.5	14.3	13.8
Debtors [10]	837	830	2 184	2 164	1 839	1 794	1 026	997	3 072	23.2	39.7	31.2	19.4	33.8
Creditors [10]	−749	−742	−2 636	−2 639	−2 709	−2 709	−1 788	−1 794	−3 293	−20.8	−47.9	−46.0	−33.8	−36.2
Debtors less creditors [10]	87	87	−452	−475	−870	−915	−762	−797	−221	2.4	−82.	−14.8	−14.4	−2.4
Total working capital	1 213	1 204	2 450	2 425	2 541	2 517	1 580	1 540	4 457	33.7	44.5	43.2	29.9	49.0
Other expenditure														
Investments	296	294	336	349	50	42	248	250	636	8.2	6.1	0.8	4.7	7.0
Intangible assets [11]	11	11	31	31	16	18	19	21	5	0.3	0.6	0.3	0.4	0.1
Consolidation adjustment	−62	−58	−154	−130	−97	−87	−8	−10	3	−1.7	−2.8	−1.6	−0.2	—
Total uses of funds	3 604	3 573	5 507	5 455	5 885	5 888	5 286	5 238	9 086	100.0	100.0	100.0	100.0	100.0

Sources of data

The figures used in this article have been obtained from two sources:

1 Table 1: Quarterly data on the sources and uses of funds of all industrial and commercial companies resident in the United Kingdom published in *Financial Statistics*. These data form part of the national accounts.

2 Tables 2, 3 and 4: Department of Industry (DoI) analysis of the published consolidated accounts of large listed and unlisted companies operating mainly in the UK in manufacturing, distribution, construction, transport and certain other services. These figures are published, in detail, annually in Business Monitor MA3, Company Finance but see *Trade and Industry* 7 July 1978 (pages 52 to 54) for summary figures for large listed companies in 1976, illustrating the form of the analysis.

Table 1, based on national accounts data, covers the period 1967 to 1977 so as to include revisions to figures previously published. In tables 2, 3 and 4 figures are given back to 1972 only; figures back to 1964 for tables 3 and 4 were published in the *Economic Trends* September 1975 article. The equivalent figures for table 2 can be supplied on request (from inquiry point give at the end of the article).

The national accounts data provide a consolidated account for all industrial and commercial companies so that, for example, dividends passing between industrial and commercial companies resident in the UK do not appear in the figures. The DoI data, in contrast, are only consolidated to the extent that they are taken from the consolidated accounts of groups of companies, so that, for example, dividends passing between two groups of companies are included in the DoI figures. Also the national accounts data, because they relate only to the UK activitiy of companies, do not include their overseas operations and instead show explicitly certain transactions between the United Kingdom parent and their overseas subsidiaries. However, the national accounts figures for industrial and commercial companies are not drawn from a common source and the quality of the information varies considerably. Further, not all financial assets and liabilities are covered by the statistics, the most important omissions being certain categories of trade creditors and debtors. The extent of the errors and omissions in the national accounts data is revealed by the discrepancy between total sources and total uses of funds, giving rise to an amount for unidentified items, which can be very large.

The main advantage of the DoI data on the other hand, is that they are drawn from company accounts which provide a comprehensive and balanced account of sources and uses of funds. However, because the analysis is based on the consolidated accounts of groups of companies the figures also include any overseas subsidiaries of these companies but they omit the UK activities of UK companies operating mainly abroad. In addition the figures relate to companies' accounting periods ending in the fiscal years so that the time period covered ranges over nearly two years; for instance, the 1972 analysis includes some accounts with accounting years ending in April 1972 and others ending on 5 April 1973. This can make it difficult at times to distinguish changes.

The broad features of the DoI analysis of large companies' sources and uses of funds are generally very similar to those for all industrial and commercial companies from the national accounts data; the companies in the DoI analysis are thought to account for something like three-fifths to two-thirds of the net assets of all industrial and commercial companies. The two sets of figures do, as mentioned earlier, differ because of differences in coverage, timing, and the definition of items so that comparisons between the two sets of data cannot be precise.

There are, however, some noticeable divergences at times between the results shown by the DoI analysis and the national accounts data. In particular, comparing the proportions shown in table 2 with those in table 1, internal funds of the companies in the DoI analysis were greater than four-fifths of total funds in 1972 before falling in 1973 and, again, in 1974 to just over two-thirds. For the national accounts series, covering all industrial and commercial companies, there was a sharp fall in internal funds' proportion of total funds in 1972 to just below three-fifths. It fell further in 1973 before recovering to almost three-fifths again in 1974. This divergence mainly related to bank borrowing but was also due in part to the fact that some companies delayed payment of dividends. These factors were explained in detail in the article in *Trade and Industry* 10 October 1975.

There are a number of ways of compiling statements of the sources and uses of funds depending on the purpose for which they are required. The presentation adopted here, as in the earlier articles, is a simplified one designed to illustrate the main sources and uses of funds and their relative importance for companies in aggregate, which may not be suitable for examining the position of individual companies. A Statement of Standard Accounting Practice (SSAP 10 issued July 1975) on 'Statements of source and application of funds' sets out how the sources and uses of funds by individual companies can be shown clearly.

The available aggregate statistics on the sources and uses of funds by companies identify on the one hand how funds are obtained and on the other how they are used. However there are a number of problems in determining to what extent there should be prior 'netting out' of like items and also in deciding on which side of the account items should appear. 'Netting out' involves either offsetting a particular type of expenditure against a particular source of funds, such as dividends being charged against profits rather than being treated as a separate use of funds, or vice versa where a particular type of income is offset against expenditure on similar items, such as creditors being offset against debtors. Whatever presentation is used, it is not possible to do more than show how companies raised money and how these total funds were spent. The statistical information is only an historic record of what happened and cannot show how much money companies wished to raise and spend; nor does it show for what purpose particular funds were acquired, nor how particular expenditure was financed.

classified as a creditor item and, second, to maintain a closer correspondence with the presentation in previous articles in this series. The treatment of an item like this illustrates well the difficulty of presentation of sources and uses of funds data, particularly where an item can change from being a source to a use of funds or vice versa.

The figures of debtors and creditors for the large listed companies in the DoI analysis, as given in table 2, indicate that there was virtually no change in the net position between 1976 and 1977 but that both debtors and creditors were at much lower levels. In the DoI analysis, short-term loans were included indistinguishably with creditors until 1972. Though now shown separately in Business Monitor MA3, short-term loans continue to be included in creditors for the purpose of the presentation in this article.

Total working capital, as a proportion of total uses, fell appreciably between 1976 and 1977 for large listed companies (table 2) but was unchanged for all I and C companies (table 1) though if the change in the unidentified item, or part of it, is appropriate to working capital, then there would be a fall in the proportion for all I and C companies also.

A comparison of the experience of manufacturing companies in the DoI analysis with that of all the companies in the analysis can be made from tables 3 and 4. Broadly speaking, the pattern over the five-year period is the same. This is not surprising since companies in manufacturing industries (table 4) account for just over two-thirds by number of all companies in the analysis (table 3) and, in terms of total sources and uses of funds, have accounted for three-quarters on average. The latter proportion has risen over the period from 68 per cent in 1972 to 78 per cent in 1974, 1975 and 1976.

The main changes between 1975 and 1976 in the experiences of the manufacturing and non-manufacturing group of companies in the analysis (the latter being the difference between tables 3 and 4) were that manufacturing companies increased their total sources and uses more rapidly than non-manufacturing companies, internal funds rising appreciably for both groups – by more than half for manufacturing companies, nearer a third for non-manufacturing. External funds increased substantially in absolute terms and as a proportion of total sources for both groups mainly through the reversal of the switch from being repayers to banks in 1976 back to being borrowers in 1977 – on about the same scale as in 1973. The issue of shares and loans for cash was at a higher level than in 1975 but fell back as a proportion of total sources.

On the uses side, manufacturing companies increased their expenditure on tangible fixed assets while non-manufacturing companies' expenditure remained at about the same level as in 1976. Both groups raised their expenditure on stocks, approaching the 1974 level in the case of manufacturing companies, exceeding it in the case of non-manufacturers. Both groups reduced their net creditor position appreciably but only manufacturing companies increased their holdings of liquid assets – to a historically very high level.

Inquiries: Department of Trade Home Financial Statistics, Economics and Statistics Division 6a, 1 Victoria Street, London SW1H 0ET, tel. 01-215 3132.

Notes to table 2, 3 and 4

[1] Source: DoI analysis of large listed and unlisted companies which operate mainly in the UK in manufacturing, distribution, construction and certain other services. Companies whose main interests are in agriculture, mining, shipping, insurance, banking and finance and those operating mainly overseas are not included. From 1970, the analysis covered all companies in scope with net assets of £2 million or more, or gross income of £200,000 or more, in 1968. From 1975 (and comparable 1974), the analysis covers all companies in scope with net assets of £5 million or more, or gross income of £500,000 or more in 1973. The figures in tables 3 and 4 are final figures for listed *and* unlisted companies with comparable data for the previous year; the figures in table 2 relate to listed companies only, the 1977 (and comparable 1976) figures being provisional. The figures for each year relate to accounting years ending between 6 April of the year shown and 5 April of the following year.

[2] The number of companies decreases between the comparable figures for each set of years because those companies acquired in the current year were independent in the previous year.

[3] Includes stock appreciation which is not separately shown (see text under 'uses of funds').

[4] Trading income net of depreciation and short-term interest, before deduction of tax, dividend and long-term interest payments.

[5] Depreciation at book values as charged in companies' accounts.

[6] Taxation payments include income tax payable on dividends; dividend payments are net of tax in all years.

[7] Consists of expenses on share or loan issues, amounts written off current assets and liabilities not separately distinguished, expenditure charged against reserves, and decreases in minority interests.

[8] Increase net of redemptions and excludes shares and loans issued in exchange for subsidiaries acquired.

[9] Covers cash, bank deposits, UK Treasury Bills, tax reserve certificates, and any other short-term deposits.

[10] Short-term loans are included in creditors, and short-term credit advanced and received by UK subsidiaries of overseas companies is included in debtors and creditors respectively.

[11] Covers expenditure on research and development which has not been written off against profits, patents, trade marks, licences, royalty agreements, and any goodwill not arising out of acquisitions of subsidiaries.

— Denotes nil or less than half the final digit shown. The sum of the constituent items may differ slightly from the total shown because of rounding.

Wholesale price indices in January

Output prices

The provisional price index for the home sales of manufactured products increased by 1 per cent in January to 159.8 (1975 = 100). Some of this increase can be attributed to the annual bunching of price increases at the beginning of the year. This is the smallest January increase since 1973.

The index for manufactured products other than food, drink and tobacco was also 1 per cent higher as a result of increases spread across most sectors. This index rose 2¼ per cent in the latest three months.

Higher prices for scientific and industrial instruments were responsible for most of the 2¼ per cent increase in the index for the instrument engineering industries. This index rose 4 per cent in the latest three months.

Half of the 2 per cent increase in the index for the timber industries was accounted for by higher prices for furniture and upholstery.

Higher prices for motor cars and commercial vehicles again accounted for most of the 1¼ per cent increase in the index for the vehicles industry. This index rose by 4¼ per cent in the latest three months.

Higher prices for cement made the significant contribution to the 1¼ per cent increase in the index for the bricks, cement etc industries.

Other industries with an increase of more than 1 per cent were the mechanical engineering, electrical engineering, textiles and paper industries.

The index for the output of the food manufacturing industries increased by ¾ per cent in January. Higher prices for animal and poultry foods made the most significant contribution.

More about wholesale price indices

General inquiries and tables 1, 1a and 2	**01-215 3073** **01-215 3544**
Table 3	
SIC Orders	
II-VI and XII	**01-215 5216**
VII-IX and XVI	**01-215 3549**
XI, XIII-XV and XVII-XIX	**01-215 3548**
Tables 4 and 5	**01-215 3173**

Correspondence: Departments of Industry, Trade and Prices and Consumer Protection, Economics and Statistics Division 4, Room 249, Sanctuary Buildings, Great Smith Street, London SW1P 3DB

Table 1 Price index numbers of materials and fuel purchased

1975 = 100

1968 SIC Orders or MLH Numbers		1977	1978				1978								1979
		4th qtr	1st qtr	2nd qtr	3rd qtr	4th qtr p	Jan	Jun	Jul	Aug	Sep	Oct	Nov	Dec p	Jan p
Orders III to XIX	Materials and fuel purchased by manufacturing industry:	142.2	140.2	146.3	144.9	147.1	139.4	147.0	145.8	144.2	144.8	145.7	147.3	148.2	150.6
	Materials [1]	142.1	139.5	145.5	143.8	146.2	138.7	146.3	144.8	143.0	143.7	144.7	146.5	147.5	150.2
	Coal (except for carbonising), gas and electricity	143.0	145.5	152.9	152.8	153.0	144.8	152.9	152.9	152.8	152.8	153.0	153.0	153.1	153.1
Orders IV to XIX	Materials and fuel purchased by manufacturing industry, other than food, drink and tobacco manufacturing industries	139.1	134.2	141.5	139.2	140.9	133.1	142.1	139.7	138.8	139.1	139.8	141.5	141.3	144.0
	Materials [1]	138.4	132.1	139.3	136.6	138.5	130.9	140.0	137.2	136.2	136.4	137.3	139.3	139.0	142.2
Order III	Materials and fuel purchased by the food, drink and tobacco manufacturing industries	147.5	151.1	155.2	156.4	159.1	151.0	156.6	157.6	155.3	156.3	157.5	158.6	161.2	162.9
	Materials and fuels purchased by selected broad sectors of industry														
211 to 229	Food manufacturing industries	149.6	153.7	157.0	157.2	160.8	153.6	158.0	158.8	155.2	157.6	159.0	160.3	163.1	164.8
	Materials	149.6	153.7	157.0	157.3	161.0	153.6	158.1	159.0	155.2	157.7	159.1	160.5	163.4	165.2
	Fuel [2]	150.8	152.1	155.9	155.9	156.0	151.9	155.9	155.9	155.8	155.9	156.0	156.0	156.1	156.1
211 to 229 (excluding MLH 219)	Food manufacturing industries (excluding animal and poultry foods)	149.9	153.8	156.2	157.5	161.1	153.6	157.4	158.6	155.6	158.3	159.4	160.6	163.4	165.0
Order V	Chemicals and allied industries	148.4	149.0	153.4	153.2	155.3	148.3	153.6	153.2	152.9	153.6	155.0	155.1	155.7	156.6
311 and 312	Steel industries	142.1	141.2	145.7	146.7	148.7	140.5	146.2	146.0	146.4	147.6	148.3	148.7	149.1	149.5
321 to 323	Non-ferrous metals industry	140.1	135.5	142.3	146.7	155.6	136.4	144.1	143.0	146.8	150.2	155.0	155.2	156.6	161.2
Order VII (excluding MLH 342)	Mechanical engineering industries	145.2	148.1	152.5	155.8	159.3	147.0	153.3	154.3	156.0	157.1	158.5	159.5	160.0	161.0
Order IX	Electrical engineering industries	142.1	143.4	148.3	151.2	155.2	142.8	149.5	149.6	151.3	152.6	154.4	154.9	156.2	158.1
Order X	Shipbuilding and marine engineering industries	146.1	150.9	156.0	158.9	162.9	148.7	156.6	158.0	158.8	159.9	161.9	162.8	163.9	165.5
Order XII	Metal goods industries	145.8	147.8	152.6	155.5	159.1	146.6	153.5	154.0	155.7	156.7	158.3	159.2	159.7	160.7
Order XIII	Textile industries	141.3	140.8	145.4	146.1	149.6	139.5	146.0	145.5	146.1	146.7	148.3	149.5	150.9	151.8
Order XV	Clothing and footwear industries	137.4	139.5	142.3	144.8 p	147.0	139.2	142.8	144.2	144.5	145.7 p	146.6 p	146.8 p	147.6	149.6
461, 464 and 469	Bricks, cement etc, industries	146.2	148.6	152.9	154.5	157.2	147.6	153.6	154.1	154.5	154.8	156.3	157.4	158.0	158.8
462 and 463	Pottery and glass industries	152.6	155.3	158.6	160.2	163.2	154.9	159.2	159.8	160.3	160.6	162.9	163.2	163.6	164.7
Order XVII	Timber industries	147.7	146.1	147.0	150.7	153.4	146.5	148.1	149.4	150.9	151.8	152.6	153.4	154.2	156.2
481 to 484	Paper industries	123.0	117.5	120.6	120.2	124.8	117.3	120.7	120.8	119.9	119.8	123.9	125.6	125.0	128.5
Order XX	Construction materials	150.0	153.0	156.6	159.7	162.9	152.0	157.7	158.7	159.7	160.6	161.9	163.0	163.8	165.6
Part of Order XX	House building materials	150.9	152.5	156.2	159.8	163.0	151.4	157.7	158.7	159.9	160.9	161.8	163.0	164.1	165.9

[1] Includes crude oil and coal for carbonising. [2] Includes petroleum products. p Provisional.

Table 1a Price index numbers of materials and fuel purchased by selected sectors of industry

1975 = 100

1968 SIC		1977	1978				1978								1979
		4th qtr	1st qtr	2nd qtr	3rd qtr	4th qtr p	Jan	Jun	Jul	Aug	Sep	Oct	Nov	Dec p	Jan p
361	Electrical machinery industry	143.3	145.5	149.4	152.5	155.6	144.7	150.3	151.3	152.6	153.7	154.7	155.6	156.6	158.5
362	Insulated wires and cables industry	137.4	136.2	142.8	145.3	149.7	136.7	145.1	143.4	145.7	146.7	148.6	149.0	151.6	153.8
364	Radio and electronic components industry	142.2	144.8	148.5	151.5	155.3	143.7	149.3	149.9	151.5	153.0	154.9	155.3	155.8	157.8
368	Domestic appliances industry	146.5	149.1	152.1	155.4	158.6	148.0	152.7	154.0	155.6	156.6	157.8	158.7	159.2	160.8
369	Electrical goods industries n.e.s.	144.6	145.9	149.7	153.0	157.3	145.3	150.7	151.4	153.1	154.6	156.4	157.3	158.1	160.2
381	Motor vehicle industry	144.9	148.4	152.6	156.1	159.1	147.1	153.6	154.8	156.3	157.2	158.2	159.3	159.7	160.7
411	Man-made fibres industry	134.9	134.1	137.1	137.4	140.8	133.1	137.2	136.9	137.5	137.8	140.4	140.8	141.1	143.1
414	Woollen and worsted industry	139.4	139.2	150.5	154.3	158.0	137.8	154.7	155.1	154.3	153.6	153.0	157.9	163.2	164.0
422/1	Household textiles and handkerchiefs industry	139.8	140.9	143.7	146.5	149.6	140.4	144.8	145.7	146.3	147.4	148.8	149.6	150.3	152.1
450	Footwear industry	135.4	136.5	139.3	141.9 p	143.4	136.3	139.8	141.4	141.9	142.5 p	142.9 p	143.5 p	143.8	146.3
481	Paper and board making industry	121.7	115.2	118.5	118.0	123.1	115.1	118.6	118.6	117.8	117.6	122.1	123.9	123.2	126.7

p Provisional.

This index rose by 2½ per cent in the latest three months.

The change in the index for all manufacturing products measured over a 12 month period fell from 8¼ to 7¾ per cent, returning to the level in the four months August to November of last year. The increase in the index over the latest six months rose from 3¾ to 4 per cent.

Input prices

The provisional price index for materials and fuel purchased by manufacturing industry increased by 1½ per cent in January to 150.6 (1975 = 100). This index rose 8 per cent over the last 12 months.

Two-thirds of the increase of 2¼ per cent in the index for materials purchased by manufacturing industry other than the food, drink and tobacco industries was caused by the higher price of crude oil introduced on January 1. With crude oil excluded the index rose 1¼ per cent; higher prices for woodpulp, hides and skins, and lead were mainly responsible.

Higher prices for copper and, to a lesser extent, lead were responsible for the 3 per cent increase in the index for materials and fuel purchased by the non-ferrous metals industry. This index rose by 4 per cent in the latest three months.

Most of the 2¾ per cent increase in the index for the paper industries was accounted for by higher prices for imported woodpulp. This index rose by 3¾ per cent in the latest three months.

Half of the 1¼ per cent increase in the index for the timber industries was accounted for by higher prices for imported softwood.

Higher prices for gold made the most significant contribution to the ¾ per cent increase in the index for the metal goods industry.

The index for materials purchased by the food manufacturing industries increased by 1 per cent. The main contributors to the increase were coffee, home-produced meat, home-landed fish and potatoes.

Notes on wholesale price indices

1 Detailed notes on index numbers of wholesale prices were last shown in *Trade and Industry*, 20 October 1978.

2 The index numbers are constructed on a net sector basis. This is to say, the price movements used to compile the index for a particular sector of industry are only those relating to transactions between the sector and other sectors. Transactions between undertakings in the same sector are excluded. Thus index numbers for the whole of manufacturing industry are not weighted averages of sector index numbers.

3 All the index numbers are compiled exclusive of value added tax and (before its abolition) of purchase tax. Revenue duties (on cigarettes and manufactured tobacco, alcoholic liquor, matches and mechanical lighters) are included. The duty on hydrocarbon oils is excluded from output price series that cover these products (unless specifically noted to the contrary) but is included in series for materials and fuel purchased by sectors of industry.

4 Firm and provisional indices, at all levels of aggregation, include imputation for items for which there is no current price information. Additional provisional figures will be published for those indices where there are insufficient returns to allow accurate imputation.

5 Revisions to firm index numbers will only be made if they are significant. These revisions will be notified when the series are next published.

6 Some indices in tables 3 and 4 were only published at intervals of four months on base 1970 = 100. Commencing in December 1978 all available indices on base 1975 = 100 are published every month.

7 Where extension of indices on base 1970 = 100 is required for contract purposes the multiplication factors and explanatory notes are show in *Trade and Industry* 15 December 1978.

Guide to government statistics

See centre pages
Trade and Industry
5 January 1979

Table 2 Price index numbers of output (home sales)

1975 = 100

1968 SIC Orders or MLH Numbers		1977	1978				1978								1979
		4th qtr	1st qtr	2nd qtr	3rd qtr	4th qtr p	Jan	Jun	Jul	Aug	Sep	Oct	Nov	Dec p	Jan p
Orders III to XIX	Output of manufactured products	145.8	149.2	151.8	154.8	157.3	148.3	152.7	153.8	154.8	155.7	156.6	157.1	158.3	159.8
Orders IV to XIX	Products of manufacturing industries other than food, drink and tobacco manufacturing industries	143.3	146.6	149.4	152.3	155.3	145.8	150.3	151.4	152.2	153.3	154.5	155.2	156.1	157.8
	Output of selected broad sectors of industry														
211 to 229	Food manufacturing industries	153.8	157.2	160.1	163.7	165.7	156.3	161.4	162.9	163.7	164.4	164.7	164.9	167.6	168.7
211 to 229 (excluding MLH 219)	Food manufacturing industries (excluding animal and poultry foods)	155.3	159.2	162.1	165.3	167.7	158.3	163.0	164.3	165.3	166.2	166.7	166.7	169.6	170.6
Order V	Chemicals and allied industries	137.8	141.2	142.8	144.2	146.8	140.4	143.0	143.6	144.2	144.9	145.8	146.9	147.6	149.1
Order VI	Metal manufacturing	148.3	149.8	152.7	156.6	160.4	149.9	153.8	155.2	156.8	157.8	159.2	160.5	161.5	161.9
311 and 312	Steel industries	147.5	150.6	152.8	156.6	158.7	150.0	153.1	155.2	157.1	157.4	157.8	158.9	159.3	159.6
Orders VII to XII	Engineering and allied industries	143.3	147.5	151.0	154.8	158.4	146.4	152.2	153.6	154.7	156.0	157.2	158.1	159.8	161.7
Order VII (excluding MLH 342)	Mechanical engineering	143.1	147.7	150.7	154.4	158.2	146.9	151.2	153.0	154.4	155.9	157.0	157.8	159.7	161.7
Order VIII	Instrument engineering	139.5	145.8	147.2	149.4	152.7	145.0	147.5	148.8	149.5	149.9	151.8	152.1	154.3	157.9
Order IX	Electrical engineering	137.0	139.4	142.9	145.2	148.6	138.8	144.1	144.2	145.4	146.1	147.7	148.8	149.4	151.3
Order XI (excluding MLH 383)	Vehicles	151.2	157.0	160.0	165.5	168.6	155.1	161.7	164.9	165.6	165.9	166.6	168.3	171.4	173.5
Order XII	Metal goods industries n.e.s.	146.3	150.5	155.6	159.9	164.2	148.9	156.5	157.4	159.8	162.6	163.6	164.1	164.9	166.1
Order XIII	Textile industries	139.0	143.0	145.5	148.9	151.3	142.3	146.1	147.6	148.6	150.4	150.8	151.2	151.9	153.8
Order XV	Clothing and footwear	133.7	138.4	140.8	144.3	147.9	137.7	141.6	143.1	143.9	145.8	147.2	148.1	148.5	149.8
441 to 445 and 449	Made-up clothing	132.5	137.0	139.3	142.9	146.6	136.3	140.0	141.6	142.6	144.5	145.9	146.8	147.2	148.2
461, 464 and 469	Bricks, cement etc. industries	157.5	160.1	166.2	170.3	173.2	158.8	168.1	169.2	170.4	171.2	172.9	173.1	173.7	175.8
462 and 463	Pottery and glass industries	148.3	151.9	155.4	158.3	163.7	150.3	156.2	157.5	157.8	159.5	163.5	163.9	163.7	165.3
Order XVII	Timber industries	141.9	144.4	145.8	148.9	151.3	143.6	146.1	147.7	148.9	150.1	150.4	151.4	152.2	155.1
481 to 484	Paper industries	131.9	132.4	133.5	134.5	138.2	132.2	133.8	134.2	134.6	134.7	137.5	138.0	139.0	141.1

p Provisional

Table 3 Commodities produced in the United Kingdom (published monthly)

1975 = 100

1968 SIC order or MLH and industry	1978 Jan	1978 Oct	1978 Nov	1978 Dec p	1979 Jan p
II Mining and quarrying					
101 **Coal**	140.6	152.0	154.7	154.7	154.7
102 **Stone and slate quarrying and mining**	163.2	177.2	178.8	179.1	179.7
Stone quarrying and mining					
Limestone and dolomite	171.1	187.2	188.4	188.8	189.5
Uncoated limestone roadstone and aggregates	156.6	171.2	172.7	173.1	173.7
Coated limestone roadstone	165.8	176.6	179.0	179.8	180.1
Granite	148.8	158.8	161.0	161.4	161.8
Granite and other chippings, aggregates and roadstone	141.0	154.0	156.5	157.4	157.9
Granite and other chippings	144.9	154.3	153.1	154.4	155.1
Coated granite and whinstone roadstone	153.9	162.0	164.0	164.0	164.4
Slate quarrying and mining					
Roofing slates	184.7	204.4	204.4	204.4	204.4
103 **Chalk, clay, sand and gravel extraction**	169.2	180.5	180.3	180.3	181.3
Sand and gravel (uncoated)	193.6	214.4	213.9	213.9	215.4
Sand and gravel (ex-pit or works)	194.4	215.3	215.4	215.4	216.9
Sand and gravel (delivered)	171.3	187.6	187.6	187.6	188.3
Clay, brick, earth, marl and shale					
China clay	141.1	141.4	141.4	141.4	142.0
109 **Other mining and quarrying**	173.4	182.4	182.4	182.4	182.7
109/3 **Salt**	189.8	198.9	198.9	198.9	198.9
III Food, drink and tobacco					
231 **Brewing and malting**	143.7	149.3	149.3	149.3	149.3
240 **Tobacco**	156.0	161.2	161.2	161.2	161.2
IV Coal and petroleum products					
261 **Coke ovens and manufactured fuel**					
Foundry coke	140.2	152.5	152.5	152.5	152.5
262 **Mineral oil refining**					
Motor spirit (including duty)[a]	130.9	130.9	130.9	130.9	130.9
Gas/diesel oil	166.0	166.0	166.0	166.0	166.0
Gas oil fuel	168.6	168.6	168.6	168.6	168.6
Derv (including duty)	160.3	160.3	160.3	160.3	160.3
Medium fuel oil (950 seconds including duty)	169.5	169.5	169.5	169.5	169.5
V Chemicals and allied industries					
271 **General chemicals**	141.6	148.6	149.2 p	149.7	152.1
271/1 **Inorganic chemicals**	148.4	158.2	159.0 p	158.4	159.9
Inorganic acids and oxygen compounds of non-metals	129.6	136.2	136.5 p	137.0	139.2
Metallic oxides, hydroxides, peroxides and other inorganic bases	142.1	159.9	161.1	161.1	162.5
Metallic salts and peroxy salts of inorganic acids	151.2	160.5	161.3	161.3	161.9
Soda ash	166.1	177.0	177.5	177.5	177.5
Metallic salts and peroxy salts of inorganic acids-other than soda ash	147.3	156.0	157.0	157.0	157.8
271/2 **Organic chemicals**	135.6	142.4	143.3	144.6	148.0
Hydrocarbons other than products of coal tar etc	128.1	138.2	140.8	142.8	148.9
Halogenated, sulphonated, nitrated or nitrosated derivatives of hydrocarbons	149.2	154.1	154.9	157.5	160.0
Alcohols, phenols and pheno-alcohols	131.4	131.5	131.5	131.8	134.1
Nitrogen function compounds	127.8	139.2	139.2	139.2	139.2
271/3 **Other chemicals**					
Bleaching materials	167.9	185.4	185.5	191.5	192.2
Plasticisers, mixed or unmixed	127.8	128.9	128.9	128.9	129.9
272 **Pharmaceutical chemicals and preparations**					
Pharamaceutical chemicals					
—central nervous system	165.7	171.6	172.8	173.1	174.5
Pharmaceutical preparations	146.5	157.2 p	158.0 p	159.8	160.5
—central nervous system	162.9	177.4 p	181.8 p	182.3	182.8
Anaesthetics	140.4	144.8 p	145.4 p	146.0	146.0
Analgesics	153.4	170.1	171.1	171.1	171.1
Psycho analeptics	176.1	182.3	182.3	182.3	182.3
—cardiovascular system	169.4	172.5	172.7	172.7	173.4
Plain hypotensives	170.7	170.7	171.1	171.2	171.2
—respiratory system	165.0	178.8	178.8	179.4	179.5
Cough and cold preparations	169.0	179.0	179.0	179.7	180.0
—alimentary tract and nutrition	135.8	152.6	152.4 p	152.4	152.9
—dermatologicals	138.1	151.9	152.9	152.9	153.6
—general anti-infectives					
Antibiotics	124.3	128.6	127.5	128.3	129.7
Penicillins	144.3	154.3	154.9	154.9	156.5
273 **Toilet preparations**	141.4	150.1	151.8	152.2	155.3
—specifically for men	143.7	151.3	151.3	151.3	158.0
After-shave, cologne and pre-shave lotions in alcoholic lotion form	158.2	166.5	166.5	166.5	177.6
—other than specifically for men	141.2	149.9	151.9	152.3	155.0
Hair preparations (excl. shampoos)	140.3	157.8	159.1	159.2	160.6
Talc and dusting powders and bath preparations					
Talc and dusting powders	145.5	159.0	159.0	159.0	162.3
Bath oils, cream and liquid essences	134.1	138.3	152.8	152.8	152.8
Make-up preparations	142.9	148.5	148.7	148.8	151.0
Lipsticks and lip glosses inc. lipsalve	141.9	148.1	148.8	149.4	151.4
Face powders	143.5	152.2	152.2	152.2	155.9
Liquid and cream facial make-up preparations	142.1	157.0	157.0	157.0	159.0
Eye shadow and mascara	150.5	153.2	153.2	153.2	155.5
Nail preparations	130.4	131.1	131.1	131.1	133.4
Creams and lotions	131.2	138.1	138.2	139.1	141.7
Facial beauty care preparations	127.6	136.9	136.9	137.6	141.4
Cleansing creams, cold creams, *lotions and milks, moisturisers,* nourishing and night creams	128.3	134.1	134.1	134.1	138.8
General creams and lotions					
Hand creams, lotions and gels	155.6	163.1	163.5	166.3	168.7
Deodorants, anti-perspirants and depilatories	127.0	134.4	135.8	135.8	137.9
Dental toothpaste and powder	145.3	148.3	151.4	152.0	153.1
Soapless shampoos	147.6	160.4	160.4	160.4	175.4
274 **Paint**	137.0	142.1	142.1	142.4	143.3
Air drying and stoving finishers, undercoats, primers, surfacers and sealers, varnishes and lacquers					
Building structural and preservative products	137.4	141.3	141.3	141.7	142.7
Emulsion paints	136.1	138.6	138.6	138.9	139.9
Filling and sealing compounds of all types	125.2	134.5	134.5	134.5	134.5
275 **Soap and detergents**	133.7	137.4	140.7	142.1	142.4
Fatty acids	134.8	143.0	147.2	148.7	145.8
Soap (excluding scouring preparations)	130.4	133.9	135.6	137.5	138.4
Toilet soap in tablet form	127.7	130.9	132.0	134.5	135.5
Finished synthetic detergents compounded materials primarily for washing purposes	132.0	135.3	139.9	141.1	141.7
276 **Synthetic resins and plastics materials and synthetic rubber**	141.0	141.9	142.9	143.1	144.8
276/1 **Synthetic resins and plastics materials**	140.7	141.8	142.6	142.9	144.4
Products of condensation, polycondensation and polyaddition	141.1	142.1	142.2	142.3	145.8
Products of polymerisation and copolymerisation	139.9	138.3	139.0	139.5	140.8
Acrylics	128.9	129.0	129.5	131.4	132.4
Polyethylene granules, compounds and powders	137.3	135.0	136.2	136.3	137.7
Styrene polymers and copolymers	137.2	132.4	132.1	132.2	133.5
Cellulosics and other plastics and modified natural resins	132.7	134.7	141.6	141.6	143.6
Intermediate forms between the resin and semi-fabricated stages	146.8	147.7	148.3	148.3	148.5
Semi-finished products	141.9	147.7	147.7	147.8	149.0
277 **Dyestuffs and pigments**	149.6	158.0	161.5 p	165.0	165.2
Pigments					
Inorganic pigment colours	157.6	163.6	166.4 p	166.4	167.5
White lead[a]	166.6	184.2	188.7	194.0	207.7
278 **Fertilisers**	139.2	141.3	142.5	143.8	145.2
279 **Other chemical industries**	140.0	148.1 p	149.2 p	149.8	151.9
279/4 **Formulated pesticides**	139.8	148.8 p	147.5 p	148.4	150.0
Disinfectants	133.1	143.3	143.6	146.0	148.1
Pesticides	149.6	156.2 p	155.1 p	155.5	157.3
Insecticides (other than seed dressings)	151.1	157.7 p	156.5 p	156.9	158.5
Containing organophosphorous compounds	130.6	129.4 p	125.6 p	125.6	126.7
Preparations for plant control					
Herbicides	138.9	145.8	142.1 p	142.3	143.6
279/6 **Surgical bandages, etc**	138.7	147.6	148.5	149.0	151.9
Surgical and medicated dressings	141.1	151.9	153.8	154.9	160.0
Disposable sanitary goods					
Sanitary towels and tampons	136.6	143.7	143.7	143.7	144.6
279/7 **Photographic chemical materials**	137.6	147.7 p	147.9 p	148.0	149.6
VI Metal manufacture					
311/2 **Steel**	150.0	157.0	158.0	158.1	158.5
Non-alloy steels	149.9	156.3	157.3	157.4	157.8
Ingots, blooms, billets, slabs	160.7	165.0	165.0	165.0	165.0
Heavy rails, sleepers and fishplates, etc	148.6	148.6	148.6	148.9	160.1
Heavy rolled products, 80 mm and over	161.0	161.4	161.4	161.4	162.1
Angles, tees and other sections	156.6	156.9	156.9	156.9	158.0
Girders, beams, joists, columns	163.0	163.2	163.2	163.2	163.7
Rods and bars in coils	143.8	151.4	151.4	151.4	151.4
Steel strip (non-alloy)	145.9	158.1	158.1	158.1	158.1
Hot rolled strip (under 600 mm wide)	145.0	156.3	156.3	156.3	156.3
Plates in coils and cut lengths	132.1	134.4	134.4	134.4	134.4
Steel sheet (under 3 mm thick)	154.5	162.1	162.1	162.1	162.1
Uncoated steel sheet	158.7	167.6	167.6	167.6	167.6
Uncoated steel sheet hot rolled	140.4	152.0	152.0	152.0	152.0
Uncoated steel sheet cold reduced	160.6	169.2	169.2	169.2	169.2
Electrical steel sheet	158.7	167.7	167.7	167.7	167.7
Galvanised steel sheet	143.5	147.7	147.7	147.7	147.7
Light sections	143.1	145.1	145.1	145.1	145.2
Tinplate and blackplate	155.0	163.4	170.4	171.5	171.5
Tinplate	155.1	163.6	170.6	171.6	171.6
Blackplate	149.3	155.2	161.4	162.4	162.4
Bright steel bars, non-alloy	156.5	168.3	168.3	168.3	168.3
Forgings (other than drop forgings)	163.0	175.8	176.1	176.8	177.1
Non-alloy steel castings	151.9	163.9	169.4	169.8	170.1
Stainless and heat resisting alloy steels	145.3	151.8	153.3	153.4	153.4
Sheets (under 3 mm thick)					
Stainless steel sheets	154.7	166.9	166.9	166.9	166.9
Stainless steel castings	142.7	157.2	162.2	162.3	162.3
Alloy steels other than stainless and heat resisting	152.7	165.8	166.4	166.5	166.5
Ingots, blooms, billets, slabs (excluding tube)	159.7	172.6	172.5	172.5	172.5
Bars and rods other than in coil (excluding bright bars)	149.0	159.8	160.4	160.4	160.4
Plates in coils and cut lengths	124.6	138.4	138.4	138.4	138.4
Alloy steel castings	145.9	161.8	163.9	164.2	164.4

Table 3 Commodities produced in the United Kingdom (published monthly) *continued*

1975 = 100

1968 SIC order or MLH and industry	1978 Jan	1978 Oct	1978 Nov	1978 Dec p	1979 Jan p
Structural steel	146.4	150.0	150.0	150.0	150.2
Steel for reinforcement (cut, bent, and delivered)	147.0	158.8	158.9	158.9	158.9
Light re-rolled bars and sections	141.6	148.3	148.3	148.3	148.3
312 **Steel tubes**	151.7	163.3	163.3	163.3	163.4
Fittings for steel tubes	138.4	149.2	149.2	149.2	151.9
Steel tubes (other than electric conduit tubes)	157.5	171.4	171.4	171.4	171.4
313 **Iron castings, etc**	145.8	155.8 p	158.9 p	159.5	160.7
313/3 **Engineers castings**	144.1	152.8 p	154.0 p	155.1	156.9
Vehicle iron castings	140.1	149.2	150.7	151.4	154.2
—industrial and marine machinery and plant	147.4	155.8 p	156.8 p	158.2	159.0
Heavy engineering	145.9	155.4	157.5	157.5	158.6
Light engineering and hydraulic	143.3	154.2 p	156.2 p	156.4	157.4
313/4 **Other iron castings**					
Building and domestic goods	148.8	167.8 p	174.6 p	174.8	174.8
Cast and spun iron pipes and fittings	142.5	152.8	164.5 p	164.5	164.5
321 **Aluminium and aluminium alloys**					
Semi-manufactures (excluding castings and forgings)					
Aluminium plate, sheet, strip, circles and blanks	184.6	175.9	180.9	180.6	180.6 e
Aluminium extrusions and tubes (bars, rods, sections, etc)	178.8	179.3	183.3	186.7	186.7
Aluminium forgings	171.5	191.5	191.5	191.5	191.5
322 **Copper, brass and other copper alloys**					
Copper					
Copper tubes	132.3	149.0	149.5 p	152.2	152.2
Copper sheet and strip	130.9	142.6	142.4	150.3	153.3
Brass and other copper alloys					
—unwrought	118.1	132.5	132.5	133.7	133.8
—semi-manufactures	121.3	134.5	134.6	139.0	140.1
323 **Miscellaneous non-ferrous metals**					
Lead and lead alloys					
—semi-manufactures	174.3	198.1	202.8 p	209.4	211.2
Nickel [2]	115.9	109.3	107.0	105.2	99.4
Titanium	155.8	175.0	175.0	208.4	212.0
VII Mechanical engineering					
331 **Agricultural machinery**	158.7	171.1	173.1 p	175.1	176.9 e
Soil preparation and cultivation machinery	158.6	168.6	169.1	169.7	171.9 e
Harvesting, threshing, feed processing etc machinery	160.6	174.7	178.2 p	179.6	181.3 e
Pick-up balers	161.5	178.3	178.3	178.3	180.2 e
Grinding mills and meal mixers (excluding combined mills and mixers)	151.7	164.4	164.4	165.7	167.5 e
Milking machinery					
Milking machines, including parts	164.4	171.3	173.0	173.0	174.3 e
Elevators and conveyors (excluding tractor mounted hydraulic loaders)	165.3	174.3	177.4	184.7	186.7 e
332 **Metal working machine tools**	151.0	161.7 p	165.0 p	166.7	168.4
332/1 **Metal cutting machine tools**	152.9	163.4	167.3	167.6	169.5
332/2 **Metal forming machine tools**	147.4	158.0	160.8	165.7	167.4
333 **Pumps, valves, compressors and fluid power equipment**	141.3	153.0	154.8 p	156.0	158.0 e
333/1 **Pumps**	144.6	156.0	157.4	157.3	159.5
Centrifugal pumps	145.4	156.0	156.1	156.0	158.5
Positive displacement pumps	143.1	157.4	163.5	163.5	164.5 e
Kerbside petrol and oil measuring pumps and parts	139.3	149.2	149.2	149.2	152.4
333/2 **Industrial valves**	134.6	144.4	146.8 p	147.9	149.7 e
Valves – ferrous metal	131.6	140.2	142.8 p	144.3	146.1 e
Iron valves	145.2	152.7	155.1 p	160.9	162.7 e
Steel valves	127.1	136.1	138.7 p	138.8	140.6 e
Valves – non-ferrous metal	143.1	156.3	158.3 p	158.3	160.0 e
333/3 **Air and gas compressors**	146.0	164.0	166.1	166.8	168.6
333/4 **Fluid power equipment**	143.6	156.3	157.6	159.7	161.6 e
Oil/hydraulic fluid power equipment	145.7	157.9	160.0	165.2	166.1 e
Pneumatic control fluid power equipment	139.7	153.4	153.4	153.4	153.5
334 **Industrial engines**	157.0	171.9	172.0	172.6	177.6 e
Diesel compression internal combustion engines	158.8	172.3	172.5	173.0	178.3 e
336 **Construction and earth-moving equipment**	160.7	174.2 p	174.5 p	175.2	177.9 e
Excavators, trenchers, ditchers and digging machinery including parts	166.3	181.2 p	181.3 p	181.3	185.6 e
Wheeled tractor shovels, crawler tractors, dumpers and other earth-moving equipment	162.3	174.6	175.2	176.4	178.6 e
Dumpers and dump trucks	147.0	161.9	161.9	161.9	164.2 e
Concrete mixing and placing machinery	145.8	161.1	161.4	161.7	164.5 e
Crushing, pulverising and screening plant, including parts	151.6	163.6	163.6	163.6	165.2 e
337 **Mechanical handling equipment**	146.7	158.7	159.3	159.5	161.8 e
337/2 **Cranes and transporters**	148.4	159.9	160.0	160.2	165.8
337/4 **Lifting and winding devices**	146.9	155.6	159.1	160.7	161.7 e
337/5 **Powered industrial trucks and tractors**	153.1	165.9	166.0	166.2	167.5
339/1 **Mining machinery**	142.4	154.3 p	154.9 p	155.5	157.5 e
339/3 **Refrigerating machinery**	153.9	167.5	168.1 p	168.6	172.5 e
339/5 **Scales and weighing machinery (excluding precision balances)**	144.8	154.4	154.4	155.2	157.2 e
339/6 **Portable power tools**	144.9	156.0	157.5	157.7	158.8
Portable power tools, non-electric – pneumatic					
—for civil engineering, mining and quarrying	146.7	166.9	168.4	168.4	168.4
—for general engineering	148.8	167.6	167.7	167.7	169.8 e
Portable power tools, electric	143.6	149.4	151.1	151.6	152.5
—power drills	150.3	154.6	156.5	156.6	156.8
339/7 **Food and drink processing machinery**	146.8	157.1	158.4	159.0	161.5 e
339/9 **Miscellaneous (non-electrical) machinery**	152.1	164.9 p	166.5 p	167.3	168.7 e
VIII Instrument engineering					
352 **Clocks, watches and time recorders**	145.6	157.4	157.4	157.8	162.4 e
Clocks	146.1	163.7	163.7	164.2	169.8 e
354 **Scientific and industrial instruments and systems**	143.2	148.8	148.9	151.7	155.6 e
354/2 **Other scientific and industrial instruments and systems (non-optical)**					
Analytical instruments	141.7	144.9	145.5	152.7	155.4 e
Spectrophotometers and absorptiometers	132.6	135.9	136.7	136.7	139.3 e
Electrical measuring, testing and controlling instruments and apparatus	137.6	143.7	142.7	142.7	149.8 e
IX Electrical engineering					
365 **Broadcast receiving and sound reproducing equipment**	128.2	133.7 p	133.9 p	134.0	134.6 e
365/1 **Gramophone records and pre-recorded tapes**	142.2	161.1	161.1	161.1	161.1
Gramophone records	143.7	163.3	163.3	163.3	163.3
—33⅓ rpm	144.9	164.7	164.7	164.7	164.7
—45 rpm	138.6	156.8	156.8	156.8	156.8
Pre-recorded tapes (other than video)	134.8	150.3	150.3	150.3	150.3
365/2 **Broadcast receiving and sound reproducing equipment, other than gramophone records and pre-recorded tapes**	124.0	125.3 p	125.6 p	125.7	126.4 e
Domestic television receivers	125.9	128.1	128.4 p	128.5	129.3 e
—monochrome	126.9	126.9	127.5	128.6	128.6
—colour	125.8	128.2	128.5 p	128.5	129.3 e
Stereo audio systems, incorporating turntable/amplifier	111.4	112.3 p	112.6 p	112.7	113.1 e
368 **Electrical appliances primarily for domestic use**	149.4	158.4	160.1	160.6	161.6 e
Domestic electric cooking apparatus	149.8	163.5	164.9	165.0	165.8 e
Domestic electric flat irons	142.2	152.5	155.3	155.3	155.3 el
Domestic electric heating apparatus	154.7	164.6	165.7	167.1	168.0
Domestic space heating apparatus	160.7	171.8	171.8	171.8	171.8
Electric water heaters	150.8	162.1	167.3	171.9	172.4
Vacuum cleaners	153.3	159.8	161.5	163.1	164.6
Domestic refrigerators and freezers	143.2	145.2	146.7	148.1	149.2 e
Miscellaneous domestic electric appliances (includes food and drink mixers, hair dryers and dry shavers)	148.6	157.2	159.2	159.2	160.3 e
369/4 **Electric lamp bulbs and tubes**	146.8	155.9	163.4	165.4	165.4
Fluorescent tubular lamps	144.5	155.9	165.6	167.6	167.6
Electric lamp bulbs, filament type —exceeding 28 volts	149.2	157.6	163.2	166.0	166.0 e
XI Vehicles					
380 **Wheeled tractors, complete**	173.7	184.0	186.6	188.2	192.6 e
381 **Motor vehicles**	155.3	167.0	168.7 p	172.0	174.1
Passenger cars	157.9	170.4	170.6	175.3	177.5
Passenger cars [3]	157.9	170.4	170.6	175.3	177.5
Commercial and public service vehicles	157.8	168.9	172.4	175.0	178.0
Commercial vehicles	158.9	169.4	172.3	174.8	178.3
Commercial vehicles and chassis not exceeding 3.5 tons gvw	164.4	176.4	178.3	181.6	186.3
Commercial vehicles and chassis exceeding 3.5 tons but not exceeding 16 tons gvw	157.4	167.0	170.9	173.1	174.0
Commercial vehicles and chassis exceeding 16 tons gvw	153.8	163.8	166.4	168.4	171.1
Public service vehicles	155.7	167.9	172.8	175.8	177.3
XII Metal goods not elsewhere specified					
390 **Engineers small tools and gauges**	164.3	177.4	179.9	181.5	182.4
Engineers cutting tools	164.1	176.9	179.7	182.7	183.0
Diamond tipped tools and diamond dies	155.2	201.4	201.8	202.0	203.8
Saws					
Hacksaw blades	184.5	201.8	201.8	201.8	201.8
Milling cutters	146.0	153.8	154.4	163.4	163.4
391 **Hand tools and implements**	158.7	170.1 p	170.2 p	174.0	176.7
Agricultural, horticultural and foresters hand tools	172.3	181.2 p	181.6 p	188.3	189.8
Hand saws and hand saw blades	177.1	193.3	193.3	204.9	206.6
Hand tools and implements excluding agricultural and foresters hand tools and saws and saw blades	155.5	167.3	167.3	170.2	173.6
Pliers, pincers and nippers, etc	179.0	193.7	193.7	193.7	196.9
Spanners and wrenches	157.7	169.0	169.0	173.6	174.8
Planes, hammers, cold chisels etc, screwdrivers, wood chisels and gouges	154.6	172.5	172.5	175.7	179.6
Measuring and marking out tools	140.5	155.4	155.4	155.4	157.0
392 **Cutlery, spoons, forks and plated tableware etc**	147.1	160.2	162.0	163.0	165.2
Finished cutlery suitable for domestic or personal use	148.7	156.1	156.1	157.7	167.6
Scissors and tailors' shears (including pinking shears)	149.1	157.5	157.5	164.5	168.1
393 **Bolts, nuts, screws, rivets etc**	155.4	171.5 p	172.5 p	172.5	173.8
Precision standard bolts etc, of high tensile steel	144.1	151.4 p	152.5 p	152.5	154.1

Table 3 Commodities produced in the United Kingdom (published monthly) *continued*

1975 = 100

1968 SIC order or MLH and industry	1978 Jan	1978 Oct	1978 Nov	1978 Dec p	1979 Jan p
394 **Wire and wire manufactures**	145.0	156.0	156.2 p	156.9	158.8
Iron and steel wire	148.3	158.1	158.3 p	158.4	159.4
Single drawn wire other than alloy and high carbon steel	148.4	160.5	160.7	160.9	160.9
Wire ropes (excluding insulated electric wire and cable)	142.7	150.8	150.8	150.8	155.6
Iron and steel woven wire, cloth gauze fabric etc, (excluding netting and fencing) of square or rectangular mesh	152.1	159.4	159.4 p	159.4	159.4
—stainless steel	149.7	150.3	150.3 p	150.3	150.3
—other than stainless steel	153.3	164.1	164.1 p	164.1	164.1
Other wire manufactures, ie grille netting, fencing reinforcement fabric etc	145.1	157.2	157.3	157.3	158.3
Wire of copper, brass and other copper alloys					
Woven wire cloth, gauze fabric, etc, of copper and brass, etc	147.0	150.8	150.9 p	151.8	151.8
Reinforcement fabrics	138.9	150.3	150.3	150.3	150.3
Chain link fencing	155.4	170.0	170.0	170.0	171.4
399 **Metal industries not elsewhere specified**	146.8	161.5	162.3 p	163.0	164.1
399/1 **Metal furniture**	141.0	156.7	156.9 p	157.3	158.6
Office metal furniture	148.8	165.4	166.2 p	167.1	169.1
Filing cabinets and other filing containers	154.9	171.8	172.8 p	173.9	175.5
399/2 **Metal windows and door frames**	160.3	171.7	175.2	175.3	176.6
399/6 **Domestic hollow ware**	148.0	163.6	163.6	163.6	167.4
Cookware	148.8	168.4	168.4	168.4	171.3
399/7 **Vats, tanks, cisterns and other industrial hollow ware**	147.1	162.4	162.4	162.5	162.6
Steel drums	150.7	165.6	165.6	165.6	165.6
399/8 **Needles, pins, fishhooks and other metal smallwares**	158.9	179.0	180.0	181.6	181.9
399/9 **Domestic gas appliances**	155.0	166.3	167.5	169.9	171.3
Gas cookers	154.1	166.4	166.7	169.5	170.8
Gas fires and space heaters	156.5	164.9	168.9	171.6	171.8
Water heaters and other domestic gas apparatus (excl. refrigerators and meters)	155.8	168.7	168.7	168.7	172.5
399/12 **Miscellaneous metal goods**					
Sanitary ware and plumbing fixtures and fittings	148.7	162.8	164.4	165.1	166.6
Fire extinguishers (hand operated chemical type only)	134.1	145.5	145.5	150.5	151.5
Catering equipment	150.7	162.7 p	163.6 p	164.9	166.4
Plumbers brassware	148.1	158.6	160.4	161.4	163.0
XIII Textiles					
411 **Man-made fibres production**	126.5	128.3	129.1	129.1	130.7
Man-made fibres – continuous filament yarn	135.6	138.2	139.4	139.4	141.1
412 **Spinning and doubling on the cotton and flax systems**					
Single yarns spun on the cotton and flax systems	138.1	148.4	150.2	151.7	153.7
Man-made continuous filament yarns, textured, bulked or crimped – synthetic fibres	119.6	130.7	130.2	130.4	131.9
Finished thread for sewing, embroidery, etc	166.8	180.1	180.6	180.6	181.2
—of man-made fibres	140.0	149.7	150.6	150.6	151.4
413 **Weaving of cotton, linen and man-made fibres**	134.2	139.1	139.3	141.2	143.0
Woven cotton cloth in the loomstate	139.1	147.3	147.7	148.4	149.8
Cloth wholly of man-made continuous filament yarn on the loomstate	129.0	133.9	134.3	136.3	138.3
Man-made fabric tyre cord and tyre fabric	134.9	133.0	133.0	133.0	134.8
Woven linen	162.4	172.1	172.1	172.1	174.2
Woven fabric of glass fibre	161.7	164.5	164.5	164.5	173.0
414 **Woollen and worsted products**	150.3	158.2	158.3	158.9	160.0
414/1 **Wool sorting, cleaning, etc and combing and top making**					
Wool tops [3]	154.6	162.1	160.2	160.3	162.3
414/2 **Yarns spun on the worsted and semi-worsted systems**	143.7	149.9	150.9	154.5	155.8
Yarns of wool spun on the worsted system	151.0	154.7	155.9	159.2	160.8
Yarns of man-made fibres spun on the worsted system	132.7	137.4	137.6	140.2	140.8
414/3 **Woven worsted fabrics**	145.0	150.1	150.0	150.0	150.7
414/4 **Wool rag** [4]	160.3	161.9	163.8	164.5	166.6
414/5 **Woollen spinning and weaving**					
Woven woollen fabrics (other than blankets)	155.9	166.6	166.7	166.7	166.7
Woven woollen fabrics (other than blankets) containing 50 per cent or more by weight of wool or fine animal hair	160.3	169.2	169.4	169.4	169.4
Spinning and weaving of jute and other yarns on the jute system	134.5	142.4	143.0	143.0	143.0
Spun yarns of jute and man-made fibres	137.4	151.5	151.5	151.5	151.5
Woven cloths of jute and man-made fibres	130.4	136.1	139.4	139.4	139.4
Woven cloths of polypropylene on the jute system	134.3	139.4	139.4	139.4	139.4
Rope, twine and net	123.7	128.4	128.4	128.4	128.7
Cordage, cables, ropes and twine of textile materials (excl. agricultural twines)	122.9	129.5	129.5	129.5	129.6
417 **Hosiery and other knitted goods**					
Socks and stockings	127.7	137.9	137.9	139.1	140.5
Women's socks and stockings	118.6	129.8	129.8	130.2	131.3
419 **Carpets and rugs**	144.2	154.5	154.5	154.7	156.4
Woven carpets and carpet type rugs —faced with yarn containing at least 50 per cent but less than 100 per cent by weight of wool	158.7	167.8	167.8	168.2	170.5
	160.0	170.4	170.4	171.0	173.5
Rugs including pile fabric, deep pile knitted	145.8	159.1	159.1	159.1	159.1
421 **Narrow fabrics**					
Petershams, galloons and ribbons	149.1	157.4	157.5	157.5	163.3
422 **Made-up textiles**					
422/1 **Household textiles and handkerchiefs**	138.1	144.5	145.6	147.9	148.7
Hand and bath towels	149.4	153.9	153.9	154.4	156.6
429 **Other textile industries**	159.2	167.3	167.3	168.2	171.5
429/1 **Asbestos manufactures**	167.3	173.3	173.3	173.6	177.7
429/2 **Miscellaneous textile industries**					
Mechanically bonded fibre-needled fabrics	153.5	166.8	167.0	168.2	169.5
XIV Leather goods and fur					
431/1 **Leather**					
Finished leather – for footwear	133.2	137.9	138.0	138.7	143.0
432 **Leather goods**	143.8	152.3	152.4	152.5	159.0
XV Clothing and footwear					
441 **Weatherproof outerwear**	132.0	143.5	143.6	143.7	144.0
Raincoats (excl. those of infants)					
Raincoats other than of plastics material	127.6	138.8	139.0	139.0	139.5
Weather protective industrial clothing of PVC coated materials	147.3	154.2	154.2	154.2	154.2
442 **Men's and boys' tailored outerwear**	129.3	143.6	144.1	144.7	145.8
Men's and boys' suits	133.5	153.3	153.7	153.7	154.7
Men's trousers (sold separately)	121.5	131.8	132.3	134.5	135.5
444 **Overalls and men's shirts, underwear, etc**	147.2	149.5	151.9	153.3	155.5
444/2 **Men's and boys' shirts, underwear and nightwear**	136.9	140.4	140.4	141.6	143.1
449 **Corsets, gloves and miscellaneous dress industries**	142.5	152.5	152.7	152.7	154.3
449/1 Corsets	131.8	139.0	139.0	139.0	140.7
Brassieres	151.7	164.3	164.3	164.3	166.5
449/3 **Umbrellas and walking sticks**	133.4	142.0	142.0	142.3	143.4
450 **Footwear**	142.7	151.6	153.2	153.3	155.7
Outdoor footwear	143.2	152.6	154.3	154.4	156.9
Boots and shoes with uppers wholly or mainly of leather	150.3	161.2	163.7	163.9	167.1
Men's boots and shoes with uppers wholly or mainly of leather	154.1	161.5	162.1	162.1	165.3
Women's boots and shoes – with uppers wholly or mainly of leather	149.7	164.6	167.4	167.4	171.9
Slippers, houseshoes and ballet shoes					
Women's slippers, houseshoes and ballet shoes	142.3	148.2	149.1	149.1	150.5
XVI Bricks, pottery, glass, cement, etc					
461 **Bricks, fireclay and refractory goods**	157.0	169.4	169.6	170.1	172.7
461/1 **Refractory goods**	166.1	171.9	171.9	171.9	175.3
Refractory bricks and shapes	167.4	174.0	174.0	174.0	175.1
Firebricks and shapes	151.4	159.5	159.5	159.5	162.5
461/2 **Clay building bricks and other non-refractory goods**	150.2	166.8	167.2	167.7	169.6
Common, facing and engineering bricks	150.2	167.5	167.9	168.3	169.4
Common bricks	144.9	167.3	167.7	168.4	169.6
—Non-fletton (ex-works)	147.2	172.7	173.3	174.5	174.5
—Fletton (delivered)	142.2	160.7	160.7	160.7	160.7
Facing bricks	155.1	168.5	168.9	169.0	170.1
—Non-fletton (ex-works)	162.1	174.5	175.0	175.3	175.5
—Fletton (delivered)	142.0	157.4	157.4	157.4	157.4
Engineering bricks (ex-works)	147.6	163.0	164.2	164.7	164.9
Engineering bricks (delivered)	152.4	164.4	164.5	164.7	169.3
Clay roofing tiles – (ex-works)	146.5	159.6	159.6	162.6	177.7
Unglazed floor quarry tiles – (ex-works)	153.9	166.7	166.7	170.3	178.1
462 **Pottery**	142.9	157.5	157.7	159.2	160.8
462/1 **Electric ware incl. insulators and insulator fittings wholly or mainly of ceramic material**	142.9	155.8	156.6	157.4	158.5
462/2 **Vitreous china sanitary ware and pottery tiles**	138.8	156.1	156.3	160.1	163.2
Tiles, excl. pre-cast concrete tiles	131.0	145.2	145.2	145.2	145.2
Vitreous china sanitary ware	149.0	170.3	170.7	179.5	186.6
463 **Glass**	152.8	165.5	165.9	165.2	166.8
463/1 **Glass other than containers and vacuum ware**	151.7	163.1	163.7	164.1	167.1 e
Flat glass	157.6	167.4	167.4	167.4	169.9 e
Domestic and ornamental glassware	151.1	163.6	163.6	166.1	171.8
—Hand gathered	144.4	159.4	159.4	159.4	165.3
—Mechanically gathered	153.7	165.3	165.3	168.8	174.4
Laboratory hygienic and pharmaceutical glassware and balls, tubing and rods	144.4	159.2	161.0	161.0	163.5
Glazing sheet and plate glass	159.5	169.0	169.0	169.0	171.8
463/2 **Glass containers and vacuum ware**					
Glass containers non-tubular for all products excl. wines, spirits, beer and cider	154.0	168.2	168.5	166.5	166.5
	153.8	168.2	168.3	168.3	168.3
464 **Cement**					
Calcareous cement (other than clinker) delivered in bulk	154.0	169.2	169.2	169.2	173.7
Cement in bags	154.6	170.0	170.0	170.0	176.0
469/1 **Abrasives**	153.3	172.2	172.2	172.2	173.4

Table 3 **Commodities produced in the United Kingdom (published monthly)** *continued*

1975 = 100

1968 SIC order or MLH and industry	1978 Jan	1978 Oct	1978 Nov	1978 Dec p	1979 Jan p
Abrasive wheels (disc wheels, segment sharpening stones and other forms of bonded abrasives incl diamond)	154.4	175.3	175.3	175.3	175.5
Coated abrasives – abrasive paper and cloth	151.0	166.5	166.5	166.5	169.3
469/2 **Miscellaneous building materials and mineral products**	160.7	174.8	175.0	175.8	177.4
Plasterboards	138.2	148.1	148.1	148.1	148.1
Precast concrete goods	154.0	167.4	167.7	169.7	170.3
Concrete blocks, bricks, kerbs and edgings					
Flagstones	145.6	165.3	165.4	168.4	169.5
Kerbs and edgings	135.5	155.6	155.8	158.0	159.0
Precast concrete building blocks – delivered	150.8	169.8	171.7	173.0	173.2
Precast concrete pipes to BS556 – delivered	173.6	175.9	176.4	176.5	176.5
Roofing tiles and fittings and concrete/terrazzo floor and wall tiles	145.1	157.0	157.0	157.0	158.7
Asbestos cement goods	184.7	211.7	212.1	212.1	212.1
Bituminous and flax felts	145.7	157.4	157.4	157.4	160.0
Insulating materials for thermal and acoustic purposes n.e.s.	151.4	162.6	162.7	162.7	164.2
Quicklime	164.2	185.5	184.9	184.9	188.0
Plaster (gypsum)	138.5	147.7	147.7	147.7	147.7
XVII Timber, furniture, etc					
471/1 **Timber, sawmilling etc**					
Homegrown sawn hardwood	152.5	169.4	171.7	178.1	182.3
Hardwood flooring blocks and mosaic flooring	138.8	142.8	142.9	143.9	147.8
471/2 **Builders' woodwork**	149.0	158.1	158.3	159.1	161.5
Door sets, leafs and frames and window frames	155.7	158.9	158.9	159.0	160.6
Door leafs	155.8	160.1	160.3	160.3	161.0
Window frames	155.8	157.5	157.5	157.6	159.9
Timber structures and structural components	141.1	158.0	158.5	160.4	161.8
472 **Furniture and upholstery**	139.7	147.8	148.8	149.9	153.4
Domestic upholstered furniture	133.6	143.1	144.3	145.8	148.8
Domestic wooden furniture	144.5	152.1	153.3	154.4	158.0
Bedroom furniture, excl. built-in	138.5	148.0	148.5	150.6	155.2
Kitchen furniture (excl. built-in) other than tables and seating	146.1	153.5	158.1	163.3	166.4
Dining/living room furniture, excluding built-in	145.5	153.8	159.2	165.4	166.1
Seating	144.9	154.6	155.1	155.1	157.6
Occasional furniture for dining/living room	141.7	150.2	153.0	153.0	154.3
473 **Bedding and soft furnishings**	140.3	149.5	150.4	150.4	154.3
Fully finished mattresses	151.3	162.5	163.0	163.4	169.4
Bolsters and pillows (covered)	189.8	192.3	192.3	192.3	196.6
XVIII Paper, printing and publishing					
481 **Paper and board**	130.7	133.3	134.2	134.3	136.5
Printing and writing paper and all boards for printing (excl. newsprint)	131.3	134.7	136.2	136.2	137.6
Wrapping paper	120.5	123.4	125.6	127.2	127.2
All tissue stocks	128.2	128.3	128.3	128.3	132.3
Industrial and special purpose paper	127.5	127.6	128.1	128.1	131.2
Packaging boards	138.1	141.7	141.7	141.7	141.8
Industrial and special purpose boards	135.3	139.5	139.8	139.8	140.1
Packaging products of paper, board and associated materials	131.8	139.5	140.2	140.8	142.2
482/1 **Cardboard boxes, cartons and fibre-board packing cases**	135.5	142.9	143.6	143.9	144.9
Cartons	146.0	153.5	153.5	154.2	156.2
Fibre-board packing cases	126.1	133.1	134.4	134.4	134.4
—Solid	132.7	140.9	143.2	143.2	143.2
—Corrugated	125.6	132.5	133.7	133.7	133.7
482/2 **Miscellaneous packaging products of paper and film**	123.5	131.8	132.4	133.6	136.0
Paper bags	100.8	109.7	110.1	111.9	112.3
Paper sacks	125.6	138.9	140.1	140.1	140.1
483 **Manufactured stationery**	140.4	147.9	148.3	149.8	153.7
Commercial envelopes	128.9	133.5	133.5	133.5	144.8
Business forms	140.1	146.8	146.8	147.2	148.0
Continuous stationery	130.4	137.2	137.3	137.3	138.3
Stationery and scholastic books and ruled paper	142.9	156.5	157.2	164.4	164.4
Loose leaf supplies	136.7	153.3	153.3	153.3	154.6
Filing supplies	136.5	143.0	143.0	151.3	151.3
484 **Manufactures of paper and board not elsewhere specified**	134.1	137.7	137.8	140.3	141.7
484/2 **Miscellaneous manufactures of paper and board**					
Toilet paper	142.0	142.0	142.0	142.0	142.0
Household and sanitary tissue products	137.9	137.9	137.9	137.9	139.7
Handkerchiefs and facial tissues	139.5	139.5	139.5	139.5	139.5
Kitchen rolls and towels	136.0	136.0	136.0	136.0	136.0
XIX Other manufacturing industries					
491 **Rubber manufactures**	149.6	157.7	158.3	159.2	160.9
491/1 **Tyres and tubes**	146.1	152.3	152.3	152.6	153.6
New tyre covers	146.4	151.6	151.6	151.9	153.0
—cross-ply, car and van	149.0	149.5	149.5	149.5	149.5
—radial ply, car and van	147.1	151.2	151.2	151.8	153.3
—commercial vehicles	145.4	151.7	151.7	152.1	153.1
tractors, earthmovers and land/road	144.8	153.9	153.9	153.9	155.3
491/2 **Other rubber goods**					
Belting (of rubber or plastics)	150.0	161.2	163.1	163.9	169.8
Conveyor and elevator belting	152.4	164.3	166.6	167.7	175.7
Belting other than conveyor and elevator belting					
Transmission belting	143.7	152.7	153.7	153.7	153.7
Miscellaneous rubber products					
Cellular products of rubber	134.1	142.3	142.3	142.3	149.7
492 **Linoleum, plastics floor-covering, leathercloth etc**	133.8	138.9	138.9	138.9	139.0
Floorcovering of linoleum and printed felt base	151.1	152.4	152.4	152.7	153.9
493 **Brushes and brooms**	144.6	152.6	154.7	154.7	158.4
Decorating brushes and rollers	139.5	150.6	150.6	150.6	157.3
Toilet brushes	147.6	157.2	157.4	157.5	160.1
494 **Toys, games, children's carriages and sports equipment**	145.3	151.5	151.7	152.1	155.2
494/1 **Toys and games**	142.9	147.0	147.2	147.2	150.4
Wheeled toys	138.8	150.5	150.5	150.5	150.5
Dolls and soft toys	150.7	156.6	156.6	156.8	160.1
Other metal toys	145.7	146.4	146.4	146.4	152.1
—mechanical, including train sets	138.8	141.6	141.6	141.6	157.1
—die-cast toys	146.9	147.2	147.2	147.2	151.2
Other plastic toys	137.5	138.4	139.3	139.3	141.8
Indoor table games	141.7	143.7	143.7	143.7	146.2
494/3 **Sports equipment**	154.3	167.7	167.7	168.3	171.1
495 **Miscellaneous stationers' goods**	136.6	143.9	144.6	144.6	145.2
495/1 **Pens and pencils**	145.5	155.2	155.4	155.4	157.3
Ballpoint pens	147.3	154.7	154.7	154.7	154.7
Fountain pens, stylos and markers	146.0	148.6	149.4	149.4	155.3
Fountain pens with stainless steel nibs	146.1	150.9	155.0	155.0	162.8
496 **Plastics products**					
Building materials of plastics	149.6	157.7	159.0	161.3	162.7
Pipes and fittings of plastics	157.3	161.8	164.2	168.1	169.6
Rainwater pipes and fittings of plastics	156.6	161.4	164.6	164.6	166.6
Packaging products and transit containers of plastics	143.7	146.6	146.9	146.9	151.2
Other plastics products					
Haberdashery of plastics (including slide and zip fasteners)	138.4	150.6	150.6	150.6	150.6
499/1 **Musical instruments**					
Pianos	144.7	155.8	155.8	155.8	159.0
Other indices					
312, 361/2, 362, 369/5 Part Electrical installation materials, domestic	137.1	151.1	153.4 p	154.3	155.2 e
338, 399/1, 399/3, 472 Part Office equipment and machinery (excluding computers and calculators)	138.5	151.4	151.3	151.7	153.7
399/1, 472 Part Office furniture	141.4	154.5	154.7	155.0	157.4
Special indices [4]					
Granite and limestone roadstone	156.2	168.8	171.0	171.6	172.1
Petroleum products	152.3	152.3	152.3 p	152.3	152.3
Steel sheets	155.9	164.3	164.3	164.3	164.3
Steel sheet piling	162.6	163.0	163.0	163.0	168.8
Finished stainless steels	143.4	142.1	142.1	142.1	142.1
Finished steels (other than sheets tin-plate, tubes, forgings and castings)	146.2	151.8	151.9	151.9	152.4
Steel castings	148.6	162.2	166.6	166.9	167.1
Semi-finished steels for forgings (other than drop forgings)	162.2	169.6	169.6	169.6	169.6
Malleable iron castings	152.7	167.3	168.4	168.4	168.6
Iron castings	145.8	157.2 p	160.2 p	160.9	162.1
Wrought aluminium	173.1	177.5	180.2	180.9	180.9
Brass ingots	120.2	129.9	129.4	129.8	129.8
Industrial pumps	144.9	156.4	157.8	157.7	159.9
Primary and secondary batteries	160.1	164.5	164.5	170.1	172.4 e
Door sets, leafs and frames	155.7	160.0	160.2	160.2	161.1
Domestic furniture	141.1	149.3	150.4	151.7	155.1
Divan sets	143.2	154.3	159.0	159.0	168.5

[1] Index based on scheduled outer zone prices for minimum bulk loads of 500 gallons (motor spirit 1000 gallons) exclusive of rebate.
[2] Source of price information: trade publications.
[3] Inclusive of VAT and car tax.
[4] These indices are specially constructed outside the normal wholesale price index structure. Their continued publication is a temporary measure to enable extent VOP contracts to be completed.

p Provisional. c Corrected. r Revised. e Estimates which are subject to possible major revision.

Wholesale price indices: further information

Correspondence: Departments of Industry, Trade and Prices and Consumer Protection, Economics and Statistics Division 4, Room 249, Sanctuary Buildings, Great Smith Street, London SW1P 3DB.

01-215 3073 General inquiries and **01-215 3544** tables 1, 1a and 2
01-215 5216 table 3 II-VI and XII **01-215 3549** VII-IX and XVI
01-215 3548 XI, XIII-XV and XVII-XIX **01-215 3173** tables 4 and 5

Addendum to table 3. Confirmation of figures previously published as provisional

Sic		1978 May	Jun	Jul	Aug	Sep
331	Agricultural machinery	—	—	—	—	169.9
	Soil preparation and cultivation machinery	—	—	—	—	167.2
332	Metal working machine tools	155.4	156.5	157.5	158.1	160.0
332/1	Metal cutting machine tools	157.2	158.2	159.2	159.7	161.6
333	Pumps, valves, compressors and fluid power equipment	—	—	147.6	148.7	—
336	Construction and earth-moving equipment	166.3	168.0	171.2	171.6	—
	Wheeled tractor shovels, circular tractors, dumpers and other earth-moving equipment	—	—	—	171.5	174.0
339/1	Mining machinery					
339/9	Miscellaneous (non-electrical) machinery	155.7	156.2			
354	Scientific and industrial instruments and systems	—	—	—	—	147.2
365	Broadcast receiving and sound reproducing equipment	128.1	128.4	128.4	131.8	132.5
365/1	Gramophone records and pre-recorded tapes	142.2	142.2	143.5	156.2	158.0
	Gramophone records	143.7	143.7	144.9	157.9	160.1
	33⅓ rpm	144.9	144.9	146.0	159.2	161.2
365/2	Broadcast receiving and sound reproducing equipment, other than gramophone records and pre-recorded tapes	123.6	124.1	123.7	124.3	124.7
	Domestic television receivers	126.4	126.4	126.2	126.5	127.6
	monochrome	126.9	126.9	126.9	—	—
	colour	126.3	126.3	126.1	126.4	127.6
368	Electrical appliances primarily for domestic use	—	153.9	154.0	154.3	155.6
	Domestic electric heading apparatus	—	159.5	159.5	160.4	164.4
	Domestic space heating apparatus	—	164.2	164.2	165.7	171.8
381	Motor vehicles	—	—	—	165.8	—

Revision to table 3

1968 Sic		1978 Jun	Jul
311/2	Steel		
	Tinplate and blackplate	163.4	163.4
	Light re-rolled bars and sections	145.2	

More about wholesale price indices

General inquiries and tables 1, 1a and 2	01-215 3073 01-215 3544
Table 3	
SIC Orders	
II-VI and XII	01-215 5216
VII-IX and XVI	01-215 3549
XI, XIII-XV and XVII-XIX	01-215 3548
Tables 4 and 5	01-215 3173

Table 4 Commodities wholly or mainly imported into the United Kingdom

1975 = 100

	1978 Jan	Oct	Nov	Dec	1979 Jan
Hides, skins and fur skins undressed					
Hides and skins, imported	212.2	280.6	307.5	323.2	349.9
Hides	208.2	273.1	301.7	317.3	344.9
Wet	208.1	275.2	305.0	320.0	349.7
Dry	209.7	241.9	252.2	276.6	272.7
Calf skins	264.7	377.9	383.2	400.6	415.4
Hides and skins, UK origin	237.3	296.7	317.4	329.7	355.1
Hides and skins, UK origin and imported	219.7	285.2	308.8	322.4	348.5
Oilseeds, oilnuts and oil kernels	125.8	143.1	146.6	147.3	151.2
Groundnuts, African, cif Europe [1]	145.7	164.3	165.2	158.7	159.6
Copra, Philippine, cif Europe [1]	170.8	241.7	253.1	259.2	289.0
Palm nuts and kernels, Nigerian, cif Europe [1]	168.0	213.3	236.8	233.4	249.7
Soya beans, US No. 2 grade, cif UK [1]	123.5	136.9	139.4	140.2	142.4
Linseed, Canadian No. 1, cif UK [1]	75.7	84.1	83.2	91.1	94.1
Animal oils and fats					
Herring oil [1]	141.9	139.8	138.3	133.6	129.0
Fixed vegetable oils and fats					
Cottonseed oil, washed [1]	98.8	122.5	124.4	121.4	118.0
Groundnut oil, London, spot price [1]	143.3	176.8	176.8	202.9	238.7
Olive oil, Spanish edible, max. 1% ffa [1]	112.6	116.0	117.1	117.1	118.9
Linseed oil, cif London/Hull [1]	54.2	69.6	74.6	75.5	83.2
Palm oil, crude, London, spot price [1]	137.7	170.2	165.0	159.4	161.7
Coconut oil, cif Europe [1]	156.4	228.7	240.0	249.9	224.7
Castor oil, Brazilian No. 1 grade [1]	187.1	170.9	154.2	147.9	151.7
Crude rubber					
Natural rubber smoked sheet [1]	150.0	197.5	195.9	185.9	178.4
Wood, lumber and cork					
Softwood (delivered to consumers)	147.5	151.0	151.8	152.6	155.0 e
Hardwood (ex yard or wharf)	163.4	174.3	177.3	180.2	184.6
Keruing	123.7	150.2	158.3	165.3	169.5
Ramin	146.7	171.8	180.7	192.2	208.3
Utile	196.6	206.2	206.2	210.2	212.0
Meranti	132.4	146.6	154.2	159.7	163.5
Wood and cork manufactures					
Plywood and blockboard (delivered to consumers	146.5	154.8	155.8	156.5	157.7 e
Pulp and paper					
Woodpulp	88.2	96.4	98.3	97.2	103.0

	1978 Jan	Oct	Nov	Dec	1979 Jan
Paper, paperboard and manufactures thereof					
Paper and paperboard	127.8	130.3	130.3	131.4	135.1
Newsprint paper	147.4	147.4	147.4	147.4	159.9
Textile fibres					
Raw wool, greasy or fleece washed, imported	139.0	152.0	150.6	149.7	147.7
Merino	129.3	133.2	132.9	133.2	131.4
Crossbred	151.0	175.4	172.5	170.3	167.9
Raw wool, UK origin	185.7	199.7	195.0	194.1	196.5
Raw wool, UK origin and imported	148.3	161.5	159.4	158.6	157.4
Raw cotton [1]	140.1	163.0	170.1	169.2	162.4
Raw jute [1]	119.7	118.8	118.2	123.4	122.8
Crude fertilisers and crude minerals					
Natural phosphates	72.0	72.5	73.0	73.0	73.6
Asbestos, Canadian, fob Quebec [1]	142.6	127.5	131.4	129.5	129.5
Steatite talc [1]	138.0	143.8	143.8	143.8	143.8
Metalliferous ores and metal scrap					
Bauxite, min. 86% Al_2O_3 [1]	160.1	160.1	160.1	160.1	160.1
Manganese ore, 48-50% Mn grade max. 0.1%P, cif Europe [1]	120.5	107.4	109.4	109.3	107.0
Chrome ore [1]	115.1	110.9	113.1	112.9	110.5
Tungsten ore, min. 65%, cif Europe [1]	207.0	174.8	179.4	174.1	159.1
Titanium ore [1]	97.7	108.5	108.1	107.2	105.4
Non-ferrous metals					
Silver, refined and partly refined [1]	127.7	147.9	149.7	149.4	154.0
Copper, LME settlement price [1]	116.7	134.5	134.0	138.1	147.7
Nickel, free market price [1]	115.9	109.3	107.0	105.2	99.4
Lead, LME settlement price [1]	183.9	223.2	218.4	230.4	265.7
Zinc, producers' price [1]	84.7	92.2	100.3	99.4	99.8
Zinc, LME settlement price [1]	79.7	106.0	104.3	103.4	107.2
Tin ingot, min. 99.75% LME settlement price [1]	202.3	245.2	246.6	230.8	222.8
Magnesium [1]	145.7	145.7	145.7	145.7	145.7
Bismuth [1]	73.5	71.6	73.0	72.9	71.3
Petroleum and petroleum products					
Crude oil [2]	141.1	134.4	131.8	134.4	134.4 e
Chemical elements and compounds					
Mercury, min: 99.99%, cif Europe [1]	116.2	107.5	118.8	129.0	163.7

[1] Source of information: trade publications. [2] Based on unit value of imports at their time of entry. p Provisional. e Estimates which are subject to possible major revision.

Current cost accounting:

Price indices for overseas countries

In 1977 the Central Statistical Office and the Inflation Accounting Steering Group jointly commissioned a study of the availability of price indices for current cost accounting in fourteen countries. The results of this study are available in a booklet, 'Current Cost Accounting: Guide to price indices for Overseas Countries', obtainable from Her Majesty's Stationery Office.

The booklet contains descriptions of the most appropriate indices, together with comments on their usefulness, for current cost accounting. In addition the booklet gives details of overseas price indices available in UN and OECD publications.

Price £1.60 (£1.72 by post). ISBN 0 11 630163 5

Table 5 United Nations index numbers of world export prices [1]

1970 = 100

	Primary commodities									Primary commodities and non-ferrous metals [2]		
	Total			Agricultural non-food			Non-ferrous metals					
	$	£	Purchasers' currencies	$	£	Purchasers' currencies	$	£	Purchasers' currencies	$	£	Purchasers' currencies
1974 1st qtr	303	318	274	232	244	209	160	168	144	284	298	256
2nd qtr	304	304	263	229	229	198	183	183	159	288	287	249
3rd qtr	309	315	274	221	225	196	142	145	126	287	292	254
4th qtr	320	330	284	212	213	186	126	130	111	294	303	258
1975 1st qtr	312	313	261	201	202	168	124	124	101	287	287	240
2nd qtr	299	309	250	198	204	166	121	125	101	275	284	230
3rd qtr	295	333	261	196	220	173	118	133	105	271	306	240
4th qtr	301	354	271	191	224	172	116	136	104	276	324	249
1976 1st qtr	306	368	279	202	243	184	120	144	109	281	338	256
2nd qtr	310	412	289	212	282	198	135	179	126	286	381	267
3rd qtr	314	427	291	227	308	211	140	190	130	291	395	270
4th qtr	316	459	290	232	337	213	131	190	120	291	423	267
1977 1st qtr	341	478	311	241	338	220	142	199	130	314	440	286
2nd qtr	350	489	316	249	348	224	143	200	129	322	450	289
3rd qtr	339	469	302	227	314	202	138	191	123	312	432	278
4th qtr	338	447	292	221	292	191	141	187	122	312	412	269
1978 1st qtr	347	432	287	229	285	189	140	174	116	319	397	264
2nd qtr	347	454	283	242	316	198	141	184	115	319	417	261
3rd qtr [3]	347	431	270	250	311	194	147	183	114	320	398	249
4th qtr [4]	*358*	*434*	*268*	*261*	*316*	*196*	*162*	*195*	*121*	*332*	*402*	*249*
1979 *January* [4]	*370*	*443*	*277*	*266*	*319*	*200*	*171*	*204*	*128*	*343*	*411*	*257*

[1] Published by the UN in terms of US dollars. For convenience the index numbers are also shown in sterling and in terms of purchasers' currencies by converting the dollar index at prevailing exchange rates. [2] This combined index is not published as such by the UN. [3] Provisional. [4] Projections by Department of Industry

Regional development grants: £110.3m paid out in fourth quarter

Regional development grants paid out in the quarter ended 31 December 1978 totalled £110.3 million.

The following list shows companies which have received one or more payments of regional development grant of over £25,000 in the quarter. The total of these payments is £77.8 million.

The table is drawn up on a regional basis according to the location of the premises in question and does not take account of any repayments of grant by deduction or otherwise.

Applicant	Location of premises	Grant (£'000)
Scotland		
Abergien Holdings Ltd	Glenrothes	33
Acna (UK) Ltd	Stevenston	110
A. G. Barr and Co Ltd	Glasgow	67
Air Products Ltd	Cumbernauld	28
Allarburn Farm Dairy Ltd	Elgin	25
A. Milne and Sons (Millwrights) Ltd	Aberdeen	30
Arbrook Products Ltd	Livingston	244
Arthur Bell and Sons Ltd	Broxburn	37
Arthur Bell and Sons Ltd	West Lothian	45
Bass Ltd	Glasgow	108
Bourns (Trimpot) Ltd	Dunfermline	30
BP Oil Grangemouth Refinery Ltd	Grangemouth	600
BP Trading Ltd	Grangemouth	522
Bredero Price (UK) Ltd	Edinburgh	84
Brown and Root – Wimpey Highlands Fabricators Ltd	Nigg	69
Brown and Root – Wimpey Highlands Fabricators Ltd	Nigg	134
British Leyland UK Ltd	Bathgate	265
British Leyland UK Ltd	Glasgow	121
British Olivetti Ltd	Glasgow	64
British Steel Corporation	Bellshill	31
British Steel Corporation	Cambuslang	44
British Steel Corporation	Motherwell	2,999
Bruntons (Musselburgh) Ltd	Musselburgh	616
Caledonian Graphics (GLW) Ltd	Cumbernauld	28
Cambus Litho	East Kilbride	36
Carron Hydraulics Ltd	Kirkcaldy	31
Chrysler Scotland Ltd	Paisley	281
Ciba-Geigy (UK) Ltd	Paisley	290
City Bakeries Ltd	Glasgow	36
Craiks Ltd	Forfar	37
Crosse and Blackwell Ltd	Peterhead	47
Cumbernauld Development Corporation	Cumbernauld	27
Cumbernauld Plant Ltd	Cumbernauld	25
Cummins Engine Co Ltd	Shotts	42
Dairy Produce Packers Ltd	Glasgow	38
Delta Capillary Products Ltd	Dundee	39
Don Brothers Buist and Co Ltd	Forfar	80
Ferranti Ltd	Edinburgh	78
Filtrona Textile Products Ltd	Dundee	33
Fios Group Ltd	Broxburn	25
Flexible Ducting Ltd	Glasgow	48
Forward Leasing (UK) Ltd	Glasgow	26
Fry's Metals Ltd	Glasgow	28
GEC Diesels Ltd	Glasgow	55
General Motors (Scotland) Ltd	Motherwell	56
Gestetner Papers Ltd	Alloa	60
Giddings-Lewis-Fraser Ltd	Arbroath	60
Gilmour and Dean Ltd	Hamilton	107
Glacier Metal Co Ltd	Kilmarnock	34
Glaxo Operations (UK) Ltd	Montrose	144
Glaxo Properties Ltd	Annan	257
Glengarioch Distillery Co Ltd	Aberdeen	41
Halliburton MFG and SER Ltd	Arbroath	33
Harrot and Co Ltd	Aberdeen	86
Hewlett-Packard Ltd	South Queensferry	43
Hill Samuel Leasing Co Ltd	Kilmarnock	33
Hiram Walker and Sons (Scotland) Ltd	Dumbarton	62
Hoover Ltd	Cambuslang	156
Hugh Baird and Sons Ltd	Pencaitland	58
Hugh Smith (Glasgow) Ltd	Glasgow	44
Hurstwell Engineering (Scotland) Ltd	Cumbernauld	35
Hydril UK Ltd	Aberdeen	25
IBM (UK) Ltd	Greenock	60
Imperial Chemical Industries Ltd	Dumfries	238
Imperial Chemical Industries Ltd	Grangemouth	66
Imperial Chemical Industries Ltd	Stevenston	857
Imperial Group Ltd	Glasgow	127
Inveresk Paper Co Ltd	Denny	62
Invergordon Distillers Ltd	Invergordon	59
Inver House Distillers Ltd	Airdrie	89
James Dickie and Co (Drop Forgings) Ltd	Ayr	26
James Johnston Co of Elgin Ltd	Elgin	37
John Brown Eng. (Clydebank) Ltd	Clydebank	55
John G. McGregor (Builders) Ltd	Fort William	28
John Walker and Sons Ltd	Glasgow	63
John Walker and Sons Ltd	Kilmarnock	84
John Walker and Sons Ltd	Shieldhall	257
Junior Books Ltd	Grangemouth	36
Kestrel Marine (Wick) Ltd	Wick	127
Langholm Dyeing and Finishing Co Ltd	Langholm	44
Lawson of Dyce Ltd	Aberdeen	59
Levi Straus (UK) Ltd	Whitburn	26
Low and Bonar Packaging Ltd	Dundee	38
LS Starrett Co Ltd	Jedburgh	26
Marconi Co Ltd	Donibristle by Dunfermline	26
Magnetic-Electrical Alloys Ltd	Hamilton	47
Massey-Ferguson MFG Co	Kilmarnock	60
McAlpine and Co Ltd	Coatbridge	32
McDermott Scotland	Ardersier	218
McDermott Scotland	Inverness	128
McLean and Gibson (Engineers) Ltd	Glenrothes	46
Michelin Tyre Co Ltd	Dundee	40
Midland Montagu Leasing (UK) Ltd	Paisley	56
Monsanto Ltd	Dundonald	27
Moray Firth Maltings Ltd	Arbroath	74
Motherwell Bridge Engineering Ltd	Motherwell	75
Motorola Ltd	East Kilbride	139
Nairn Floors Ltd	Kirkcaldy	97
National Coal Board	Edinburgh	620
National Semiconductor (UK) Ltd	Greenock	445
Nobel Explosives Co Ltd	Stevenston	57
Otis Pressure Control Ltd	Montrose	41
Parsons Peebles Ltd	Edinburgh	161
Philips Lighting Ltd	Hamilton	189
Polaroid (UK) Ltd	Dumbarton	228
Pye TMC Ltd	Airdrie	39
R. B. Leasing Co	Paisley	32
Roche Products Ltd	Dalry	25
Rowntree Mackintosh Ltd	Edinburgh	98
Scotboard Ltd	Irvine	32
Scottish Malt Distillers Ltd	Aberlour	38
Scottish-Newcastle Breweries Ltd	Edinburgh	365
Scottish Stamping and Engineering Co Ltd	Ayr	99
Shell UK Ltd	Aberdeen	183
Shetland Aggregates Ltd	Brae Shetland	29
Sidlaw Industries Ltd	Dundee	136
Singer Co (UK) Ltd	Clydebank	83
Smith Anderson and Co Ltd	Fife	49
Spillers Foods Ltd	Barrhead	32
Stock Alloys Ltd	Blantyre	31
Sunbiest Bakeries (Aberdeen) Ltd	Aberdeen	31
Syntex Pharmaceuticals Ltd	Edinburgh	29
Templeton Grays Carpets Ltd	Glasgow	66
Templeton Grays Carpets Ltd	Glasgow	34
Tilling Construction Services Ltd	Inverkeithing	39
Timex Corporation	Dundee	50
Tullis Russell and Co Ltd	Markinch	120
Uniroyal Ltd	Newbridge	188
United Wire Ltd	Aberdeen	27
Weir Pumps Ltd	Glasgow	71
Wiggins Teape Ltd	Fort William	36
William Collins Sons and Co Ltd	Bishopbriggs	57
William Collins Sons and Co Ltd	Bishopbriggs	149
William Grant and Sons Ltd	Glenfiddich	34
William Grant and Sons Ltd	Paisley	39
William Thyne Ltd	Edinburgh	26
Yarrow (Shipbuilders) Ltd	Scotstoun	371
Young's Seafoods Ltd	Boddam	37
Total		16,915
Wales		
Aberdare Cables Ltd	Aberdare	41
Addis Ltd	Swansea	59
Alcoa Manufacturing (GB) Ltd	Swansea	106
Aluminium Wire and Cable Co Ltd	Swansea	33

Applicant	Location of premises	Grant (£'000)
BL Cars Ltd	Llanelli	143
BP Oil Llandarcy Refinery Ltd	Neath	242
BP Trading Ltd	Port Talbot	249
BP Trading Ltd	Sully	719
BP Trading Ltd	Swansea	51
British Steel Corporation	Deeside	367
British Steel Corporation	Ebbw Vale	375
British Steel Corporation	Llanelli	96
British Steel Corporation	Pontypool	72
British Steel Corporation	Port Talbot	1,992
British Steel Corporation	Swansea	86
Brymbo Steel Works Ltd	Wrexham	2,060
Cooperative Wholesale Soc Ltd	Llandyrnog	30
Country Produce Ltd	Deeside	154
Dunlop Ltd	Cardiff	30
Dunlop Ltd	Wrexham	27
Duport Steels Ltd	Llanelli	36
E. Ladbrooke and Son Ltd	Bridgend	30
EMI Tape Ltd	Treorchy	68
Engineering Concessionaires Ltd	Sandycroft	56
Fibreglass Ltd	Wrexham	218
Ford Motor Co Ltd	Bridgend	325
Ford Motor Co Ltd	Pontypridd	27
Forth Chemicals Ltd	Port Talbot	642
GEC (Radio and Television) Ltd	Aberdare	74
General Paper and Box Manufacturing Co Ltd	Oakdale	47
GKN (South Wales) Ltd	Cardiff	520
Golden Ltd	Pontyclun	306
Graesser Salicylates Ltd	Sandycroft	38
GS Packaging Ltd	Flint	48
Gulf Oil Refining Ltd	Milford Haven	25
INA Bearing Co Ltd	Llanelli	36
INCO Europe Ltd	Swansea	178
Kellogg Co of Great Britain Ltd	Wrexham	363
Lombard North Central Leasing Ltd	Bridgend	47
Lucas Industries Ltd	Cwmbran	96
Lucas Trading Ltd	Pontypool	68
MBZ Joint Venture	'S'	132
Milk Marketing Board	Lampeter	29
Nash Rocks Stone and Lime Co Ltd	Dolymir, Walton (near Presteigne)	29
National Coal Board	Ammanford	50
National Coal Board	Rhostyllen	145
National Coal Board	Swansea	106
National Smokeless Fuels Ltd	Aberdare	29
NIPA Laboratories Ltd	Llantwit Fadre	28
Pembroke Cracking Co	Milford Haven	309
P. Leiner and Sons (Wales) Ltd	Pontypridd	57
Radiochemical Centre Ltd	Cardiff	429
Rehab Invacare Ltd	Bridgend	65
Rexham (UK) Ltd	Wrexham	60
R. H. Moore (Metals) Ltd	Bridgend	58
Signode Ltd	Swansea	69
Sir Alfred McAlpine and Sons Ltd	'S'	64
Tetra Pak Rausing and Co Ltd	Wrexham	77
Western Book Co Ltd	Maesteg	28
Whitbread and Co Ltd	Magor Gwent	647
Wiggins Teape Ltd	Pontypridd	31
Total		12,622

Northern

Albright and Wilson Ltd	Whitehaven	2,133
Alcan Lynemouth Ltd	Ashington	149
Anzon Ltd	Wallsend	27
Associated Dairies Ltd	Benton	51
BOC Ltd	Gateshead	38
BOC Ltd	Middlesbrough	126
Bowater Packaging Ltd	Darlington	41
Bowater Scott Corporation Ltd	Barrow-in-Furness	75
Brian Reed (Northern) Ltd T/A Reed Print and Design	Gateshead	38
British Cellophane Ltd	Barrow-in-Furness	34
British Gypsum Ltd	Penrith	325
British Industrial Plastics Ltd	Maryport	32
British Industrial Plastics Ltd	Newton Aycliffe	491
British Nuclear Fuels Ltd	Windscale	3,235
British Steel Corporation	Consett	267
British Steel Corporation	Consett	40
British Steel Corporation	Hartlepool	30
British Steel Corporation	Lackenby	480
British Steel Corporation	Middlesbrough	924
British Steel Corporation	Redcar	3,858
British Steel Corporation	Skinningrove	27
British Steel Corporation	South Bank	37
British Steel Corporation	Weardale	186
British Steel Corporation	Workington	275
BSC (Chemicals) Ltd	Middlesbrough	62
BTP Tioxide Ltd	Greatham	695
Carreras Rothmans Ltd	Darlington	260
Cleveland Potash Ltd	Loftus	297
Coles Cranes Ltd	Sunderland	38
Commercial Plastics Ltd	Blyth	103
Davy Ashmore International Ltd	Stockton	103
Davy Roll Co Ltd	Gateshead	76
DJB Engineering Ltd	Peterlee	172
Drums Ltd	Gateshead	27
Dunlop Ltd	Newcastle	26
F. and M. Dobson	Ponteland	31
Film Co International Ltd	Sedgefield	34
Forward Leasing (UK) Ltd	Newcastle	31
Glaxo Laboratories Ltd	Ulverston	71
Glaxo Operations UK Ltd	Ulverston	61
Henry Cooke Ltd	Milnthorpe	45
Imperial Chemical Industries Ltd	Billingham	1,657
Imperial Chemical Industries Ltd	Middlesbrough	783
Imperial Chemical Industries Ltd	Middlesbrough	545
Imperial Chemical Industries Ltd	Middlesbrough	2,302
Imperial Group Ltd (WD and HO Wills)	Newcastle	39
LCT (Blyth) Ltd	Blyth	33
Lombard North Central Leasing Ltd	Middlesbrough	79
Marconi Co Ltd	Gateshead	63
Midland Montague Leasing Ltd	Wallsend	70
Monsanto Ltd	Middlesbrough	601
Mullard Ltd	Durham	117
National Coal Board	Ellington	61
National Coal Board	Horden	199
National Coal Board	Morpeth	45
National Coal Board	Peterlee	32
National Coal Board	Seaham	135
National Coal Board	Sunderland	327
Newalls Insulation Co Ltd	Washington	112
Norpipe Petroleum UK Ltd	Billingham	100
Norpipe Petroleum UK Ltd	Seal Sands Middlesbrough	32
Norsea Pipeline Ltd	Billingham	1,186
Norsea Pipeline Ltd	Seal Sands Middlesbrough	81
North Eastern Iron Refining Co Ltd	Stillington	37
Northern Chemical Co Ltd	Middlesbrough	35
Northern Clubs Federation Brewery Ltd	Gateshead	437
Northern Engineering Industries	Gateshead	36
NSK Bearings Europe Ltd	Peterlee	46
Oxbridge Plant Ltd	Esh Winning	73
Parker Timber (Northern) Ltd	Gateshead	27
Petitjean and Co (UK) Ltd	Thornaby	73
Phoenix Tubeman Ltd	Darlington	31
Quaker Oats Ltd	Peterlee	110
Rohm and Haas (UK) Ltd	Jarrow	30
Rohm and Haas (UK) Ltd	Middlesbrough	50
Royal Ordnance Factory	Birtley	63
R. Twining and Co Ltd	North Shields	26
Scottish and Newcastle Breweries Ltd	Newcastle	135
Seymour Plant (Northern) Ltd	Seascale	30
Shell UK Ltd	Middlesbrough	98
Smart and Brown Lighting Ltd	Spennymoor	57
Smith Brothers (Whitehaven) Ltd	Whitehaven	118
Steetley Minerals Ltd	Ferryhill	163
Thames Board Mills Ltd	Workington	1,045
Thomas De La Rue and Co Ltd	Gateshead	335
Thorn Heating Ltd	Gateshead	64
TI Tube Products Ltd	Washington	27
United Biscuits Ltd	Billingham	52
Vickers Ltd	Newcastle	41
Vickers Shipbuilding Group Ltd	Barrow-in-Furness	110
William Press and Sons Ltd	Wallsend	120
Wilsons Foundry and Engineering Co Ltd	Bishop Auckland	34
Total		27,153

Yorkshire and Humberside

Armstrong Patents Co Ltd	Beverley	67
Associated Dairies Ltd	Wakefield	33
BP Trading Ltd	Hull	4,076
British Steel Corporation	Scunthorpe	643
British Steel Corporation	Sheffield	273
Canada Dry (UK) Ltd	Leeds	26
Courage Brewing Ltd	Tadcaster	103
Daniel Doncaster and Sons Ltd	Sheffield	43
E. Green and Son Ltd	Wakefield	36
E. Timm and Son Ltd	Goole	36
George Armitage and Sons Ltd	Dewsbury	33
Hargreaves Quarries Ltd	Leyburn	30
Hopkinsons Ltd	Hull	30
Humber Kitchens Ltd	Howden	116
Ideal-Standard Ltd	Hull	26
I. J. Dewhirst Ltd	Hull	80
Imperial Chemical Industries Ltd	Huddersfield	77
International Wool Secretariat	Ilkley	70
Laporte Industries Ltd	Grimsby	146
Leeds and District Dyers and Finishers Ltd	Yeadon	27
London and Scandinavian Metallurgical Co Ltd	Rotherham	50
Marfleet Refining Co Ltd	Hull	31
Marston Radiators Ltd	Shipley	56
M. H. Whittaker and Son (Holdings) Ltd	Wetherby	26
Nitrovit Ltd	Thirsk	30
Orobis Ltd	Hull	361
Plasmor Ltd	Pollington	48
Robert Jenkins and Co Ltd	Rotherham	63
Samuel Smith Old Brewery (Tadcaster)	Tadcaster	89
Samuel Webster and Sons Ltd	Halifax	75
Simon Warman Ltd	Todmorden	29
Sirdar Ltd	Wakefield	119
T. J. Smith and Nephew Ltd	Hull	29
Wold Farm Foods Ltd	Grimsby	26
York Trailer Co Ltd	Northallerton	26
Total		7,029

East Midlands

S. Englender and Sons Ltd	Alfreton Derbyshire	57
Total		57

South West

Bovril Ltd	Lifton	26
High Temperature Engineers Ltd	South Molton	65
North Devon Meat Ltd	Torrington	59
Western Excavating (EEC) Ltd	St Austell	97
Total		247

North West

Adamson Containers Ltd	Stockport	56
Auto-Masters Ltd	Hyde	25
B. and R. Engineering Ltd	Chorley	37
Barclays Mercantile Industrial Finance Ltd	Manchester	57
BAT (UK and Export) Ltd	Liverpool	28
BICC Ltd	Liverpool	161
Birds Eye Foods Ltd	Liverpool	498
BOC Ltd	Bromborough	49
Bowaters UK Paper Co Ltd	Ellesmere Port	157
British Aircraft Corporation Ltd	Preston	223
British Nuclear Fuels Ltd	Capenhurst	31
British Nuclear Fuels Ltd	Preston	139
British Rail Engineering Ltd	Horwich/Bolton	28
Burmah Oil Trading Ltd	Ellesmere Port	36
Cabot Carbon Ltd	Ellesmere Port	60
Cadbury Schweppes Foods Ltd	Wallasey	50
Cammell Laird Shipbuilders Ltd	Birkenhead	588
C. Hemmings and Co Ltd	Liverpool	32
Chloride Industrial Batteries Ltd	Bolton	105
Ciba-Geigy (UK) Ltd	Manchester	93
Coca-Cola Bottlers (Scotland and Northern) Ltd	Liverpool	80
Continental (London) Ltd	Liverpool	98
Coventry Climax Ltd	Warrington	92
Curver PCM Ltd	Runcorn	47
Daniel Thwaites and Co Ltd	Blackburn	36
DRG (UK) Ltd	Liverpool	168
Dunlop Ltd	Hindley Green Wigan	58
Ellis Jones and Co (Stockport) Ltd	Stockport	44
Evans Medical Ltd	Liverpool	84
F. Ellis and Co Ltd	Middleton, Manchester	58
Feroxide (Widnes) Ltd	Widnes	50
Fibreglass Ltd	St Helens	163
Fine Art Developments Ltd	Accrington	206
Ford Motor Co Ltd	Liverpool	155
Fothergill and Harvey Ltd	Littleborough	31
Garrett Airesearch Ltd	Skelmersdale	35
Garston Tanning Co Ltd	Liverpool	27
Geo. L. Scott and Co Ltd	Ellesmere Port	53
Girling Ltd	Bromborough	40
Greenall Whitley and Co Ltd	Warrington	36
Greenwood and Coope Ltd	Ramsbottom	29
Guinness Exports Ltd	Liverpool	141
Hayward Industrial Developments Ltd	Chorley	30
Hercules Powder Co Ltd	Liverpool	79
H. H. Robertson (UK) Ltd	Ellesmere Port	101
Hobourn-Eaton Manufacturing Co Ltd	Skelmersdale	118
Ibstock Brick Roughdales Ltd	St Helens	91
Imperial Chemical Industries Ltd	Fleetwood	37
Imperial Chemical Industries Ltd	Northwich	80
Imperial Chemical Industries Ltd	Runcorn	2,719
Imperial Chemical Industries Ltd	Thornton/ Blackpool	57
Imperial Chemical Industries Ltd	Widnes	848
James R. Crompton and Brothers Ltd	Bury	76
J. Bibby and Sons Ltd	Liverpool	62
Kellogg Co of Great Britain Ltd	Liverpool	31
Keyes Huntsman Ltd	Skelmersdale	152
Kodak Ltd	Liverpool	35
Koters (Liverpool) Ltd	Maghull	75
Laporte Industries Ltd	Widnes	69
Lever Brothers Ltd	Port Sunlight	159
Lilly Industries Ltd	Liverpool	50
Liverpool Daily Post and Echo Ltd	Liverpool	44
Lombard North Central Leasing Ltd	Ince Chester	46
Lubrizol Ltd	Bromborough	100
Metal Box Ltd	Liverpool	41
Metal Closures Thermoplastics Ltd	Skelmersdale	81
Mobil Oil Co Ltd	Birkenhead	25
National Coal Board	St Helens	433
National Coal Board	Whiston	29
Peerless Refining Co (L'pool) Ltd	Liverpool	44
Ravenhead Brick Co Ltd	Skelmersdale	26
Ravenhead Co Ltd	St Helens	28
RM Fabrications Ltd	Skelmersdale	33
Rockware Glass Ltd	St Helens	31
Rylands-Whitecross Ltd	Warrington	41
Shell Chemicals UK Ltd	Ellesmere Port	390
Shell Research Ltd	Ince Chester	327
Shell UK Ltd	Ellesmere Port	252

Applicant	Location of premises	Grant (£'000)
Spillers Farm Feeds Ltd	Birkenhead	156
Star Paper Ltd	Blackburn	28
Steetley Chemicals Ltd	Widnes	217
Talres Development Ltd	Liverpool	361
Tate and Lyle Refineries Ltd	Liverpool	26
Toughened Glass Ltd	Liverpool	27
Turner and Newall Ltd	Widnes	61
Tysons (Contractors) Ltd	Liverpool	25
United Biscuits (UK) Ltd	Liverpool	132
UKF Fertilizers Ltd	Ince Chester	36
URENCO (UK) Partnership (BNFL Enrichment (Operations UK) Ltd and Parners	Capenhurst	1,384
Van Leer (UK) Ltd	Ellesmere Port	25
Victoria Engineering Works (Cloughfold) Ltd	Rawtenstall	28
Ward Blenkinsop and Co Ltd	Widnes	45
William Blythe and Co Ltd	Accrington	26
YKK Fasteners Ltd	Runcorn	162
Total		13,803

Notes
1 'S' indicates use in more than one premises or sites in a development area.
2 Information about the publication of earlier lists appeared in in Trade and Industry, 3 November 1978.

Cinema admissions and takings in October

During October, counted as a four-week period, the weekly average of admissions to cinemas in Great Britain was 2.69 million and the weekly average of gross box office takings was £2.59 million. The comparable figures for October 1977 were 2.21 million and £1.91 million.

Registrations of British, community and foreign films

The following are details of films registered by the Department of Trade under the Films Acts 1960 to 1970, as amended by the European Communities Act 1972, during the week ended Friday, 9 February 1979.

BR/E indicates that the film is a British quota film, EC that the film is a quota film. The date which forms part of the registration number of each is the date on which quota life of the film expires.

Title of film	Registered no.	Playing time minutes	Date of registration	Registered in the name of	Maker's name
BRITISH					
Columbus Link	BR/E 39921/11/2/84	28	5 February	Twentieth Century-Fox Film Co Ltd	World Wide Pictures Ltd
Review No. 6 (32nd Year)	*BR/E 39922/11/2/84*	*9*	*6 February*	*Data Film Distributors Ltd*	*The National Coal Board*
Movietone News 2592	BR/E 39833/11/2/84	8	9 February	British Movietonews Ltd	British Movietonews Ltd
COMMUNITY					
Red Rings of Fear (Enigma Rosso)	*EC 39925/11/2/84*	*85*	*8 February*	*Bordeaux Films International Ltd*	*Daimo Cinematografica SRL Rome*
The First Time *(La Premiere Fois)*	EC 39926/11/2/84	84	8 February	Gala Film Distributors Ltd	Lira Films and Renn Productions, Paris
FOREIGN					
The Hottest Show In Town	F 39923	72	8 February	Amanda Films Ltd	AB Europa Film, Stockholm
The Passage	*F 39924*	*98*	*8 February*	*Hemdale International Films Ltd*	*Monday Films, London*
A Whale Of A Tale	F 39927	97	9 February	Ember Film Distributors Ltd	The Luckris Corporation, California
Good Time Outlaws	F 39928	90	9 February	Ember Film Distributors Ltd	General Audience Films, California

CORRECTION TO THE REGISTER
The name of the maker of the film 'Flight to Paradise' (BR/E 39900/21/1/84) registered on 19 January and corrected the following week, has been corrected to Gordon Bradley Ltd.

Index to statistics published regularly in 'Trade and Industry'

(a) annually (m) monthly (q) quarterly Weekly statistics are not included

Aerospace cost indices (m) 2 Feb 79
Air transport trade by air (a) 25 Aug 78
Balance of payments *current account (m)* *26 Jan 79*; summary (q) 15 Dec 78; overseas royalties 12 Aug 77; *trends in invisibles* *6 Oct 78*; *see also* Overseas trade of the UK
Business names and limited partnerships (a) 10 Feb 78
Capital expenditure manufacturing, distributive and service *industries (q)* *5 Jan 79*; provisional (q) 1 Dec 78; by regions 18 Feb 77; *leasing, hiring and* renting out (a) 29 Sep 78; see also Investment
Catering trades turnover (q) page 331
Check trading (a) 7 Apr 78
Chemicals industry activity (q) 19 Jan 79
Companies acquisitions and mergers (q) 9 Feb 79; analysis of accounts (q) 7 Jul 78; insolvencies (q) 2 Feb 79; liquidity (q) 8 Dec 78; new registrations: Gt. Britain (m) 26 Jan 79; N. Ireland (m) 12 Jan 79; rate of return on capital (a) 22 Sep 78; structure of company financing (a) page 334
Construction industry housing report (m) 17 Nov 78; orders (m) 10 Nov 78; output and employment (q) 5 Jan 79; private enterprise housebuilding (m) page 331; work overseas (a) 20 Oct 78
Consumers' expenditure (q) 2 Feb 79
Depositors, protection of, Act (q) 19 Jan 79
Earnings, wage rates (m) 26 Jan 79
Energy trends 10 Nov 78
Engineering industries electrical engineering (q) 22 Sep 78; instrument engineering (a) 30 Jun 78; production indices (m) 2 Feb 79; *sales and orders (m)* *26 Jan 79*
Film industry British Film Fund *Agency returns (m)* 12 Jan 79; British Film Fund distributions 26 Jan 79; *cinema admissions and* takings (m) page 350; annual inquiry (a) 25 Aug 78; *exhibitors' quota* returns (a) 5 May 78; overseas payments and *earnings (a)* *25 Aug 78*; registrations of films (a) 3 Feb 78
Food *consumption levels* (twice a year) 29 Sep 78; household consumption (q) 12 Jan 79
Footwear industry deliveries and stocks (m) 26 Jan 79
Foreign trade industrial countries' economic indicators (m) 2 Feb 79; quarterly analysis (q) 8 Dec 78; *see also* Overseas trade of the UK
Furniture deliveries and orders (m) 19 Jan 79
Health and safety (q) 11 Aug 78
Hire purchase business (m) 9 Feb 79
Housing *see* Construction industry
Industrial production index numbers (m) 26 Jan 79; Scotland (q) 26 Jan 79; Wales (q) 3 Nov 78
Insurance companies authorisations and revocations (m) 19 Jan 79; investment (q) 15 Dec 78; investments and assets (a) 10 Nov 78
Investment book values of overseas direct investment (every 3 years) 25 Feb 77; industry's investment intentions (3 times a year) 5 Jan 79; 10-year review (a) 27 Oct 78; investment and earnings overseas (a) 9 June 78; *see also* Capital expenditure, insurance companies, and pension funds
Land and building sales (a) 24 Mar 78
Made-up clothing orders and deliveries (m) 26 Jan 79
Man-made fibres deliveries (q) 1 Dec 78; production (m) 9 Feb 79; quarterly analysis (q) 1 Dec 78
Metal-working machine tools (m) 19 Jan 79
Moneylenders Acts (q) 19 Jan 79
Motor industry car and commercial vehicle production (m) 2 Feb 79; provisional (m) page 332; motor trade turnover (q) 24 Nov 78
Office development permits (q) 8 Dec 78
Official reserves (m) 9 Feb 79
Overseas trade of the UK analysis by industry (q) 1 Sep 78; analysis of trends (q) 8 Dec 78; direct exporters and credit terms (a) 21 Jul 78; export prospects (q) 15 Dec 78; import penetration (q) 18 Aug 78; invoicing in foreign currencies 3 Nov 78; *see also* Balance of payments
Pension funds investment (q) 15 Dec 78; investments and assets (a) 10 Nov 78
Price Commission index (m) 19 Jan 79
Regional development grants (q) page 348
Research and development *expenditure* 24 Jun 77; employment 1 Jul 77
Restrictive trading agreements (q) 19 Jan 79
Retail prices index (m) 19 Jan 79
Retail trades *inquiry for 1977:* provisional results 2 Feb 79; sales (m) 9 Feb 79; *provisional (m)* page 331; stocks (m) page 332
Royalties: overseas transactions (a) 14 Jul 78
Securities, particulars of dealers in 9 Feb 79
Selective financial assistance section 7 (m) 10 Nov 78; section 7 £10,000 or more (q) 24 Nov 78; section 8 (q) 24 Nov 78
Shipping nationality of vessels *in UK seaborne* trade (a) 23 Jun 78; UK revenue (a) 13 Oct 78
Steel consumption and stocks (q) 27 Oct 78; provisional (q) 18 Aug 78
Stocks manufacturers' and distributors' (q) 5 Jan 79; provisional (q) 1 Dec 78; manufacturers' (m) 2 Feb 79; retail (m) page 332
Television overseas payments and earnings (a) 25 Aug 78
Textiles activity in the industry (q) 12 Jan 79; carpet sales (m) 9 Feb 79; cotton industry production (m) 9 Feb 79; hosiery production (m) 9 Feb 79; wholesale houses' sales and stocks (m) 2 Feb 79; wool output (m) 9 Feb 79; *exports (q)* *1 Dec 78*
Tourism foreign arrivals (m) page 333; overseas travel and tourism (a) 15 Dec 78; overseas travel and tourism (q) 26 Jan 79
Unemployment (m) 5 Jan 79
Unit trusts, particulars of dealers in 9 Feb 79
Wholesale prices average prices of selected commodities (a) 14 Apr 78; index numbers (m) page 341; initial summary (m) 9 Feb 79

Organisational *information*

Commercial representation guide 20 Oct 78
CRE contact points 24 Nov 78
Departmental publications (m) 9 Feb 79
ECGD lines of credit 12 Jan 79
ECGD local offices 19 Jan 79
EEC guide parts 1, 2 and 3 1 Dec, 24 Nov & 8 Dec 78
European public holiday guide (a) 8 Dec 78
Government statistics guide 5 Jan 79
Guide to departments 27 Jan 78
Guide to HM Customs and Excise 18 Aug 78
Guide to schemes of selective financial assistance 19 Jan 79
Index, Jul-Sep 22/29 Dec 78
OTAR contact points 9 Feb 79
Release dates of economic statistics (m) 26 Jan 79
Trade promotions guide (q) 26 Jan 79

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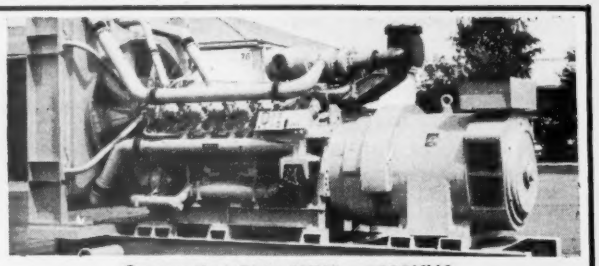

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